CITYWIDE TRAVEL BEHAVIOR SURVEY

A Joint Project of the San Francisco Department of City Planning,
the San Francisco Public Utilities Commission and
the San Francisco County Transportation Authority

August 1993

Visitor Travel Behavior

CITYWIDE TRAVEL BEHAVIOR SURVEY

A Joint Project of the San Francisco Department of City Planning,
the San Francisco Public Utilities Commission and
the San Francisco County Transportation Authority

August 1993

Table of Contents

INTRODUCTION 1

I. VISITOR TRIP LINKAGES 3

II. VISITOR TRIPS BY PLACE OF RESIDENCE, TRIP ORIGIN AND TRAVEL MODE 8
- II.A. SUPERDISTRICT 1 9
- II.B. SUPERDISTRICT 2 15
- II.C. SUPERDISTRICT 3 22
- II.D. SUPERDISTRICT 4 29
- II.E COMPARISONS BETWEEN SUPERDISTRICTS 36

III. PEAK SEASON STUDY 39

IV. AUTO OCCUPANCY RATES 50

V. TRIP GENERATION RATES 52

APPENDICES

APPENDIX A, METHODOLOGY A1
APPENDIX B, NUMBER OF RESPONSES TO VISITOR SURVEY QUESTIONS B1
APPENDIX C, STATISTICAL RESULTS OF TRIP COUNTS C1

FIGURES

FIGURE 1 - MAP OF SAN FRANCISCO SHOWING SUPERDISTRICTS 4
FIGURE 2 - ACTIVITIES LINKED TO VISITS TO LAND USES IN SUPERDISTRICT 1 5
FIGURE 3 - ACTIVITIES LINKED TO VISITS TO LAND USES, REST OF SAN FRANCISCO 6
FIGURE 4 - MODES USED TO SD 1 RETAIL & RESTAURANT SITES, BY RESIDENCE AND TRIP ORIGIN 10
FIGURE 5 - MODES USED BY VISITORS TO SUPERDISTRICT 2 RETAIL & RESTAURANT SITES, BY RESIDENCE AND TRIP ORIGIN 17
FIGURE 6 - MODES USED BY VISITORS TO SD 3 RETAIL & RESTAURANT SITES, BY RESIDENCE AND TRIP ORIGIN 23
FIGURE 7 - MODES USED BY VISITORS TO SUPERDISTRICT 4 RETAIL & RESTAURANT SITES BY RESIDENCE AND TRIP ORIGIN 31
FIGURE 8 - PLACE OF RESIDENCE OF VISITORS TO RETAIL & RESTAURANT SITES 37

TABLES

TABLE 1 - ACTIVITIES LINKED TO VISITS TO LAND USES IN SUPERDISTRICT 1 5
TABLE 2 - ACTIVITIES LINKED TO VISITS TO LAND USES, REST OF SAN FRANCISCO 6
TABLE 3 - ACTIVITIES LINKED TO VISITS TO LAND USES, ALL OF SAN FRANCISCO 7
TABLE 4 - ACTIVITIES LINKED TO VISITS TO LAND USES, PEAK SEASON 7

TABLE 5 - VISITORS TO SUPERDISTRICT 1 SITES BY PLACE OF RESIDENCE 10
TABLE 6 - ARRIVAL MODES USED BY PLACE OF RESIDENCE AND LAND USE, SD 1 SITES 11
TABLE 7 - ARRIVAL MODES BY TRIP ORIGIN, LINKAGE, MODE, LAND USE, SD 1 SITES 12
TABLE 8 - MODES USED BY VISITORS TO ARRIVE AT SITES IN SUPERDISTRICT 1 13
TABLE 9 - MODES USED BY VISITORS TO DEPART SITES IN SUPERDISTRICT 1 14

TABLE 10 - VISITORS TO SUPERDISTRICT 2 SITES BY PLACE OF RESIDENCE 17
TABLE 11 - ARRIVAL MODES USED BY PLACE OF RESIDENCE AND LAND USE, SD 2 SITES 18
TABLE 12 - ARRIVAL MODES BY TRIP ORIGIN, LINKAGE, MODE, LAND USE, SD 2 SITES 19
TABLE 13 - MODES USED BY VISITORS TO ARRIVE AT SITES IN SUPERDISTRICT 2 20
TABLE 14 - MODES USED BY VISITORS TO DEPART SITES IN SUPERDISTRICT 2 21

TABLE 15 - VISITORS TO SUPERDISTRICT 3 BY PLACE OF RESIDENCE 24
TABLE 16 - ARRIVAL MODES USED BY PLACE OF RESIDENCE AND LAND USE, SD 3 SITES 25
TABLE 17 - ARRIVAL MODES BY TRIP ORIGIN, LINKAGE, MODE, LAND USE, SD 3 SITES 26
TABLE 18 - MODES USED BY VISITORS TO ARRIVE AT SITES IN SD 3 27
TABLE 19 - MODES USED BY VISITORS TO DEPART SITES IN SUPERDISTRICT 3 28

TABLE 20 - VISITORS TO SUPERDISTRICT 4 BY PLACE OF RESIDENCE 31
TABLE 21 - ARRIVAL MODES USED BY PLACE OF RESIDENCE AND LAND USE, SD 4 SITES 32
TABLE 22 - ARRIVAL MODES BY TRIP ORIGIN, LINKAGE, MODE, LAND USE, SD 4 SITES 33
TABLE 23 - MODES USED BY VISITORS TO ARRIVE AT SITES IN SD 4 34
TABLE 24 - MODES USED BY VISITORS TO DEPART SITES IN SUPERDISTRICT 4 35

TABLE 25 - VISITORS TO SELECTED SITES DURING THE PEAK SEASON BY PLACE OF RESIDENCE 40
TABLE 26 - MODES USED BY PLACE OF RESIDENCE AND LAND USE, SELECTED PEAK SEASON SITES 41
TABLE 27 - MODES USED BY TRIP ORIGIN AND LAND USE, SELECTED PEAK SEASON SITES 42
TABLE 28 - MODES USED BY VISITORS TO ARRIVE AT SELECTED SITES DURING PEAK SEASON 43
TABLE 29 - MODES USED BY VISITORS TO DEPART SELECTED SITES DURING PEAK SEASON 44

TABLE 30 - PLACE OF RESIDENCE OF VISITORS TO LARGE RETAIL SITES, PEAK & NON-PEAK 45
TABLE 31 - MODES USED BY PLACE OF RESIDENCE AND LAND USE, LARGE RETAIL SITES, PEAK & NON-PEAK 46
TABLE 32 - MODES USED BY TRIP ORIGIN AND LAND USE, LARGE RETAIL SITES, PEAK & NON-PEAK 47
TABLE 33 - MODES USED BY VISITORS TO ARRIVE AT LARGE RETAIL SITES, PEAK & NON-PEAK 48
TABLE 34 - MODES USED BY VISITORS TO DEPART LARGE RETAIL SITES, PEAK & NON-PEAK . . 49

TABLE 35 - AUTO OCCUPANCY RATES BY LAND USE AND PLACE OF RESIDENCE 51
TABLE 36 - AVERAGE NUMBER OF TRIPS PER 1,000 SQUARE FEET, SUPERDISTRICT 1 53
TABLE 37 - AVERAGE NUMBER OF TRIPS PER 1,000 SQUARE FEET, SUPERDISTRICTS 2, 3, 4 53
TABLE 38 - AVERAGE NUMBER OF TRIPS PER 1,000 SQUARE FEET, ALL OF SAN FRANCISCO . . . 53
TABLE 39 - DAILY TRIP GENERATION RATES - EMPLOYEES & VISITORS 54
TABLE 40 - PEAK SEASON DAILY TRIP GENERATION RATES 54

INTRODUCTION

This report presents the results of the visitor portion of the Citywide Travel Behavior Study (CTBS), conducted in fall and winter 1992. It describes visitor trips to San Francisco establishments. "Trips" are one-way movements from one location to another. "Visitor trips" are defined as all trips which are not work trips, including trips by San Franciscans and non-San Franciscans. A survey of employers and employees was carried out separately to learn more about work-related travel behavior. That survey is presented in *Citywide Travel Behavior Survey - Employees and Employers, May 1993.*

The study was based on a random sample of establishments, citywide. Establishments included eight different land uses: retail, large retail, supermarket, restaurant, hotel, cultural, institutional and office. Counts were taken of the total number of people entering and leaving each selected site. In-person interviews with randomly selected visitors were conducted to get more information about the trip and about the transportation modes used. The most important areas of investigation were:

Modes used. Visitors were asked what mode or modes they used to get to the site and how they were planning to leave. This included a question about how many people were in any automobile used.

Trip linkages. People often stop at several different sites between the time they leave home and when they return. Questions were asked to discover if people had arrived from home, work, shopping, or other activities.

Place of residence. Visitors were asked their place of residence.

Trip origin. Visitors were asked where this trip had begun.

Trip generation rates. The counts of visitors were used to calculate the intensity of use associated with different land uses.

The *Primary Survey* was conducted between October 5 and November 23, 1992 and included approximately 750 hours of observation at about 400 sites representing the above listed land uses citywide (except for office uses which were surveyed only in the Downtown area). Interviews were conducted with about 10,000 visitors to these sites. A smaller effort, using the same questionnaires, was undertaken over Labor Day weekend and during the Christmas shopping season. This *Peak Season Study* was intended to explore differences in travel behavior during periods with higher levels of visitation.

The analysis results in two distinct pieces of information which will be useful for future land use and transportation planning activities. These include:

Travel Mode Analysis. Section II describes the modes of travel that visitors use to arrive and depart the survey sites, by land use and geographic area. It includes a consideration of how place of residence, trip origin, and trip linkages influence the travel modes used. Section III shows this information for the Peak Season study. Section IV gives more specific information about one mode, by showing the number of people per private automobile visiting sites by geographic area, land use, and place of residence.

Trip Generation Rates. Section V describes the number of trips which were observed arriving at and leaving establishments, by land use. These trip rates are expressed in numbers of trips per 1,000 square feet per day, except for hotels. Hotel trip rates are expressed in trips per room per day. This analysis is based on the counts of the total number of trips to and from the establishments.

I. VISITOR TRIP LINKAGES

The visitor survey asked respondents "*Where were you before you came here?*" Possible responses were "home," "work," "shopping," "school," "hotel," "recreation," and "other." If the site was their first destination, they would respond "*Home*;" if they had arrived directly from work, they would respond "*Work*." This is an example of the concept of "linked trips," trips which have more than one destination. For example, the traveler leaves home, and stops more than once to shop, eat, work, or some other activity, before returning home. The first set of tables, Tables 1 through 4, describes "linked trips" using the responses to this question. Each cell in these tables shows the percentage of trips to each land use linked to each activity.

Table 1 and Figure 2 show these linkages for Superdistrict 1, the northeast part of the City including downtown. (A map showing the locations of the four Superdistricts is on page 4.) Visitors to Cultural and Institutional sites in Superdistrict 1 were most likely to have come directly from home (about 46% and 49%). As might be expected for a major employment center, high proportions of visitors to all land uses had come from work. Visitors coming from work made up the highest proportion of retail trips (30%), of office visitor trips (54%), and a high proportion of restaurant trips (29%). Between 22% and 30% of trips to retail, large retail, supermarket and restaurant sites were home-linked.

Table 2 and Figure 3 show linkages for Superdistricts 2, 3, and 4. These trips are much more likely to have begun at home than Superdistrict 1 trips. But even at large retail sites, which is the land use that people were more likely to come to directly from home, 31% of the visitors had stopped at another shopping site first and 14% had come from some other activity.

Table 3 shows linkages citywide. More trips originate at home than at any other single activity, but most trips did not originate at home. For retail, large retail and supermarket sites citywide, visits were almost twice as likely to begin at home than to those same land uses in Superdistrict 1. Of the trips that did not begin at home, most retail, restaurant, and institutional trips came from work. Large retail and supermarket trips were more likely to be related to other shopping stops than to work. Trips to cultural sites were more likely to be linked to recreational trips than to work. Hotel visitors were more likely to make trips linked to recreation than were visitors to any other land use.

Table 4 shows linkages at visitor oriented sites during seasonal peaks (at Labor Day and between Thanksgiving and Christmas). These trips were much more likely to be hotel or recreation linked. Peak season trips to all land uses, and especially to retail and restaurants, were much less likely to be work-oriented than in the primary survey, as shown in Tables 1 through 3.

FIGURE 1 - MAP OF SAN FRANCISCO SHOWING SUPERDISTRICT BOUNDARIES

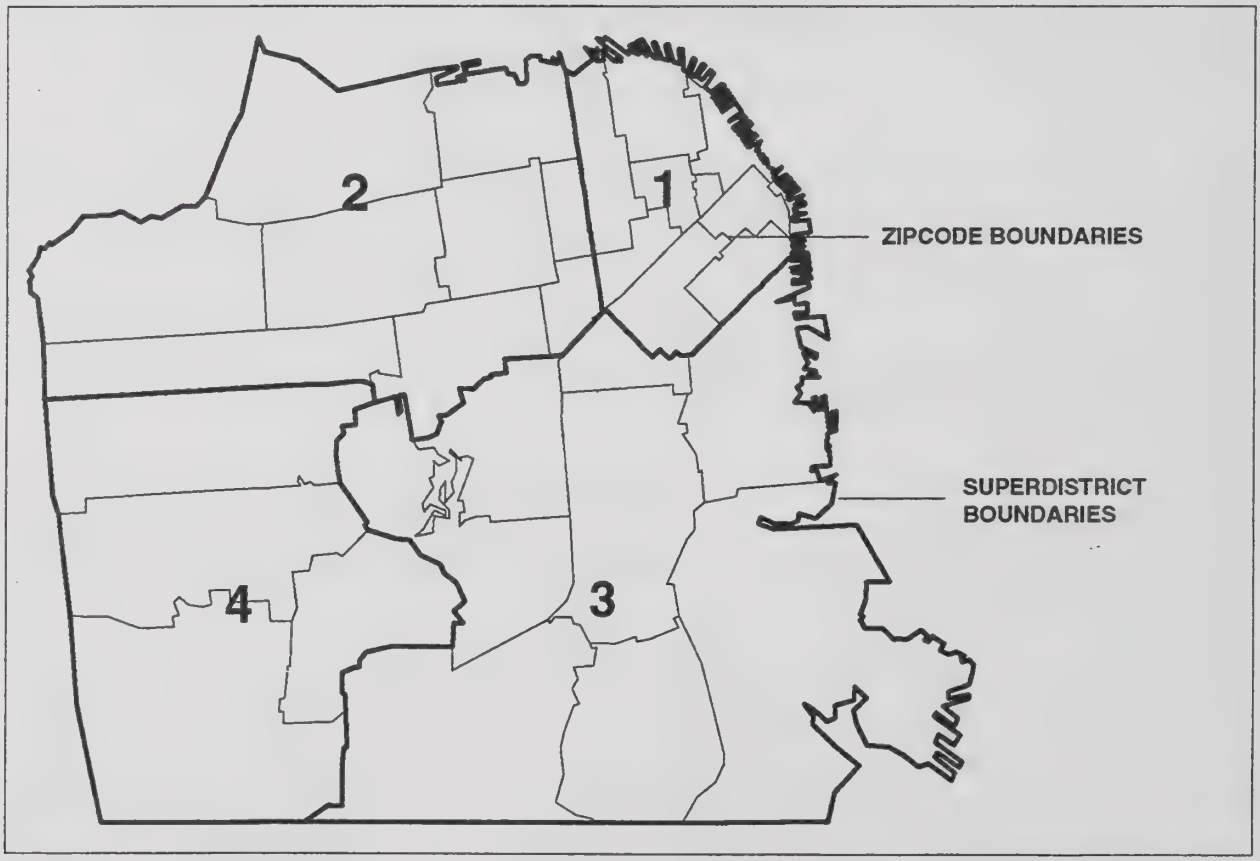


TABLE 1 -- ACTIVITIES LINKED TO VISITS TO LAND USES IN SUPERDISTRICT 1

	Retail	Large Retail	Super-market	Rest-aurant	Hotel	Cultural	Institu-tional	Office
Home	22.6	27.9	29.9	29.3	14.0	45.6	49.4	27.6
Work	29.8	23.3	17.3	28.9	29.7	13.8	22.4	54.1
Shop-ping	11.3	17.2	50.9	2.1	5.5	2.6	0.5	1.4
School	1.7	2.8	0.0	0.0	0.0	1.7	0.7	0.6
Hotel	7.9	16.3	0.0	18.8	3.8	12.6	0.7	3.9
Recre-ation	9.6	7.4	0.5	14.3	32.4	20.1	6.7	3.3
Other	17.2	5.1	1.5	6.6	14.6	3.6	19.6	9.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

This table shows, for each land use, the activities that visitors were engaged in *before* visiting the site. For example, 29.8% of visitors to Superdistrict 1 retail sites came directly from work.

FIGURE 2 - ACTIVITIES LINKED TO VISITS TO LAND USES IN SUPERDISTRICT 1

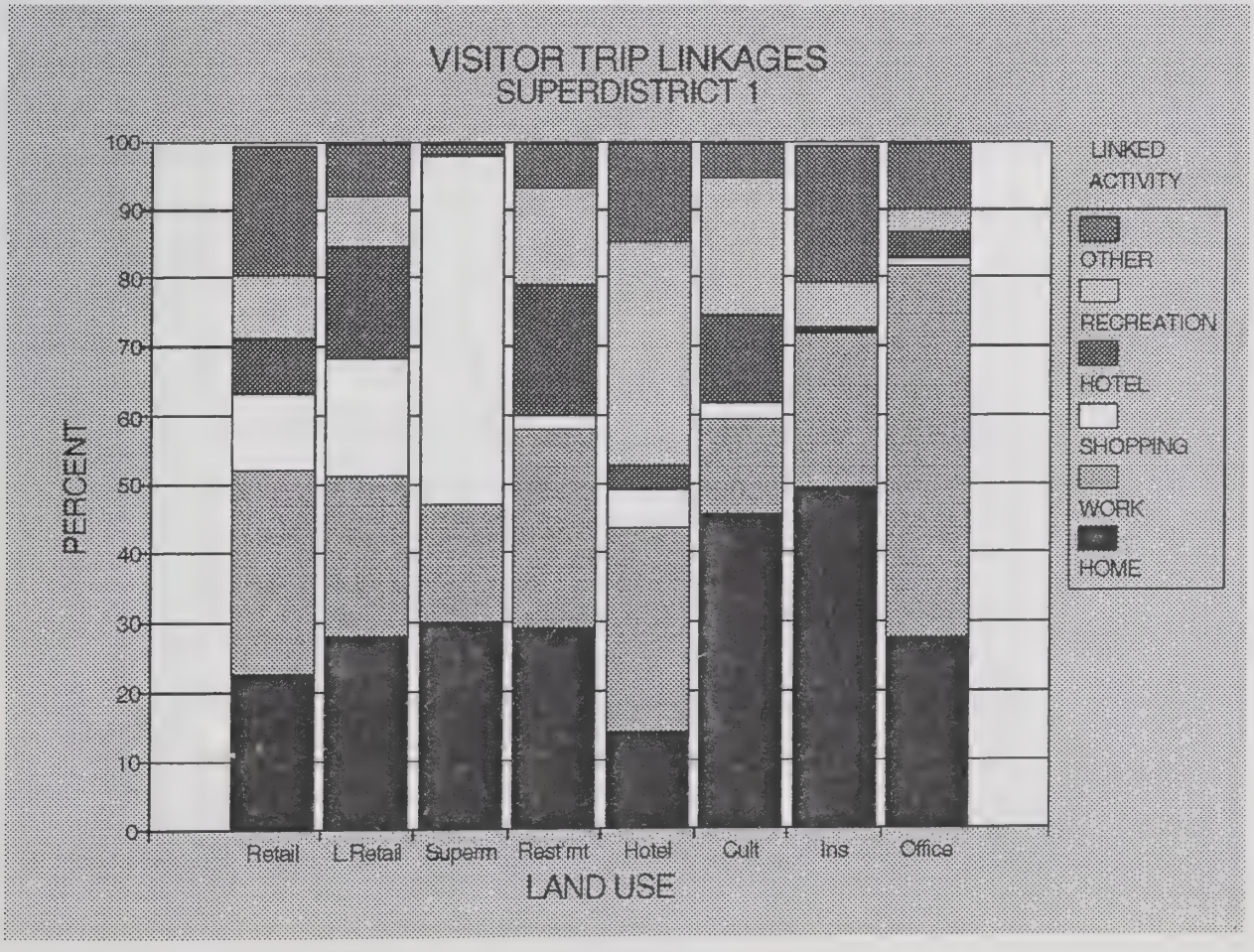


TABLE 2 -- ACTIVITIES LINKED TO VISITS TO LAND USES, REST OF SAN FRANCISCO

	Retail	Large Retail	Super-market	Restaurant	Hotel	Cultural	Institu-tional
Home	54.5	55.2	46.5	33.7	2.8	51.9	46.6
Work	13.9	2.3	11.5	26.0	36.2	11.5	12.8
Shop-ping	17.9	30.9	28.7	7.8	0.0	1.7	2.0
School	0.8	4.0	1.5	2.5	0.0	5.2	13.4
Hotel	0.7	1.6	0.5	0.7	3.4	5.0	0.1
Recre-ation	4.7	1.6	4.3	22.3	56.5	15.4	4.4
Other	7.4	4.6	7.0	7.1	1.1	9.2	20.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Office visitors were not surveyed outside of Superdistrict 1.

FIGURE 3 - ACTIVITIES LINKED TO VISITS TO LAND USES, REST OF SAN FRANCISCO

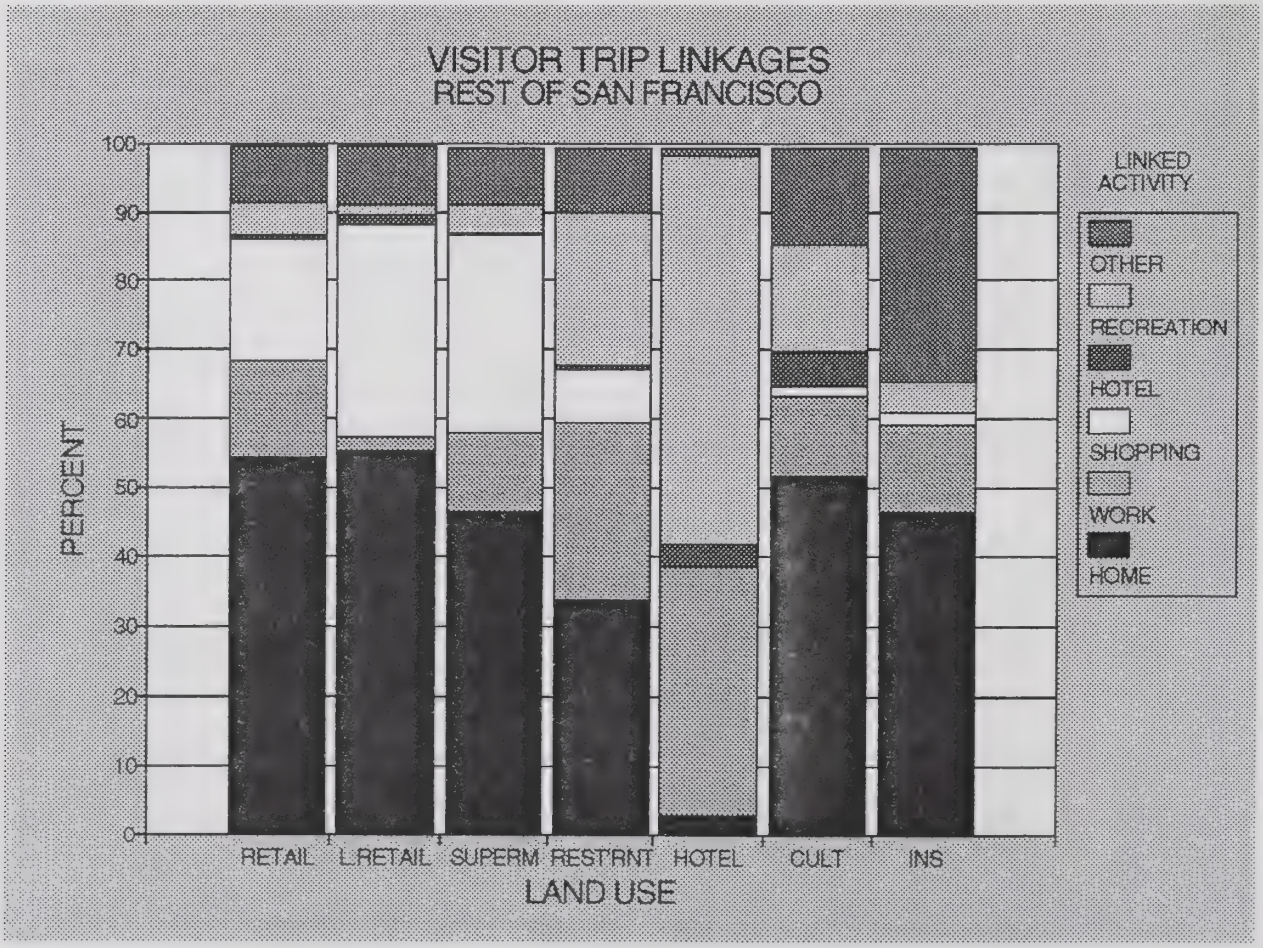


TABLE 3 -- ACTIVITIES LINKED TO VISITS TO LAND USES, ALL OF SAN FRANCISCO

	Retail	Large Retail	Super-market	Restaurant	Hotel	Cultural	Institutional
Home	30.3	45.3	43.6	30.6	11.1	49.7	47.4
Work	23.8	9.6	12.4	28.1	24.1	12.5	18.7
Shop-ping	14.4	25.5	32.1	3.5	5.5	2.1	1.1
School	1.6	3.7	1.3	0.6	0.3	4.1	5.3
Hotel	6.5	7.5	0.5	13.9	3.1	7.3	0.5
Recre-ation	8.8	4.0	3.8	16.5	31.0	16.9	6.0
Other	14.6	4.6	6.3	6.8	25.0	7.6	20.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 4 -- ACTIVITIES LINKED TO VISITS TO LAND USES, PEAK SEASON

	Retail	Restaurant	Hotel	Cultural
Home	21.9	9.4	10.6	49.9
Work	1.7	6.3	10.0	0.5
Shopping	3.4	6.5	17.5	3.2
School	0.2	0.4	0.7	0.2
Hotel	37.8	10.3	6.7	18.8
Recreation	25.6	61.4	39.9	19.2
Other	9.3	5.8	14.6	8.3
Total	100.0	100.0	100.0	100.0

II. VISITOR TRIPS BY PLACE OF RESIDENCE, TRIP ORIGIN AND TRAVEL MODE

The next 20 tables describe the trips made by visitors to a randomly-selected group of sites in each of the four Superdistricts by several variables, including the place of residence of the visitor, land use visited, mode of travel, trip origin (where the trip originally began), and linkage (previous activities or stops). See Appendix A for more detail about the sites, how sites were selected, and how the survey was administered.

About 10,000 visitors were interviewed to obtain information about their current trip. For each Superdistrict there are five tables which show:

* the percentages of trips made by place of residence to land uses in that Superdistrict.
* the percentages of those trips which use autos, transit, walk, or other modes. Because trips often use more than one mode, the four possible values for each residence/land use combination often add up to more than 100%
* the percentages of trips to land uses in that Superdistrict using each of those four modes, **depending on the trip origin** (inside or outside of the Superdistrict) and **linkage** (the previous activity: home, work or other).
* the percentages of trips **arriving at each land use** using all available modes. This table presents the possible modes in much more detail than the second and third type of tables. Because trips can use more than one mode, the columns can add to more than 100%.
* the percentages of trips **departing each land use** using all available modes. This table presents the possible modes in much more detail than the previous two tables. Because trips can use more than one mode, the columns can add to more than 100%.

These tables present varying levels of detail. Tables presenting the data in more detail are divided into more cells. When the responses are divided into fewer cells, each cell represents more responses. As a result, the average number of visitor trips described by each cell varies widely between tables. The greater the number of responses described in a given cell of a table, the more reliable will be the results. For example, Table 6 describes the modes used to arrive at Superdistrict 1 sites, by place of residence. Two hundred and twenty-two Superdistrict 2 residents visiting institutional sites responded. Seven visitors to supermarkets from out of the region responded. Consequently, the description of residents of Superdistrict 2 visiting institutional sites is much more likely to accurately represent the behavior of all such visitors than is the description of visitors from out of the region visiting supermarkets. (For a more technical discussion of the statistical reasoning behind this study, and the numbers of responses to each question, see Appendix A and Appendix B.)

The data presented here describe the behavior that was observed during the course of this study. These observations represent the most detailed information about local visitor behavior that exists.

II.A. SUPERDISTRICT 1

Tables 5 through 9 describe trips to Superdistrict 1. Superdistrict 1 is the northeast quadrant of the City, roughly bounded by Van Ness Avenue on the west, Townsend Street on the south, and San Francisco Bay. It includes downtown San Francisco and the surrounding high density residential and commercial neighborhoods.

Table 5 displays the place of residence of visitors to Superdistrict 1 sites. It shows that supermarkets were the sites which drew the largest proportion of visits from residents of this Superdistrict (about 60% of supermarket visitors) and from San Francisco residents (about 78% of supermarket visitors). Not surprisingly, hotels were the sites most likely to be visited by those who reside outside of the Superdistrict (about 95% of hotel visitors came from outside the Superdistrict) and most likely to have visitors from outside of the region (about 77% of hotel visitors came from outside the region). Other uses fell in between these two extremes. About 34% of visitors to Superdistrict 1 institutional sites were residents of the Superdistrict, as were between 9% and 17% of visitors to large retail, restaurant, cultural and retail sites.

Table 6 shows the proportions of people using different travel modes to arrive at Superdistrict 1 sites, depending on their place of residence. Table 7 shows the same information, organized instead by the geographic origin of this trip, and the activity that preceded it (linkage). For example, if someone lives in the East Bay, works in the Financial District, and visits a Superdistrict 1 restaurant after work, that restaurant trip will show in Table 6 in the rows describing East Bay resident trips, but in Table 7 that trip will be counted in the rows describing trips, linked to work, that originate in Superdistrict 1.

Tables 6 and 7 and Figure 4 show that both place of residence and trip origin influence choice of mode. For example:

* North Bay and the South Bay residents used cars for some part of their trips at higher rates (over 50% of all trips to most land uses) than did San Franciscans, East Bay residents, or visitors from outside of the region.
* Trips beginning within Superdistrict 1 were quite likely to be walking trips, or include a walking portion. This is especially true for work-linked trips. About 83% of work-linked retail trips, 97% of work-linked supermarket trips, and 81% of work-linked restaurant trips included a substantial walking portion.
* In most cases (hotels being the exception) well below 20% of trips within Superdistrict 1 used automobiles.

Tables 8 and 9 show arrival and departure modes at a more disaggregated level than the other tables, distinguishing between auto drivers and passengers, the different public transit carriers, and between other modes such as taxis, bicycles and motorcycles. This disaggregation shows that MUNI was used by over 15% of visitors to retail, large retail, cultural, institutional and office sites. The land use with the highest rate of BART use was large retail, at about 13%. No other public transit carrier served more than about 1% of visitors to any land use.

Almost 15% of trips to Superdistrict 1 hotels used taxis, as did 3% or more of all trips to restaurants, offices, cultural and institutional establishments. Both bicycles and motorcycles were used in many trips to Superdistrict 1 offices (9% and 3%), reflecting trips by couriers.

TABLE 5 -- VISITORS TO SUPERDISTRICT 1 SITES BY PLACE OF RESIDENCE

	Retail	Large Retail	Supermarket	Restaurant	Hotel	Cultural	Institutional	Office
SD 1 Residents	16.9	9.4	59.1	9.4	4.6	12.3	33.9	17.8
SD 2 Residents	10.0	14.6	9.1	5.3	2.0	11.7	15.8	17.3
SD 3 Residents	10.5	10.4	6.8	7.8	4.5	11.3	14.0	16.4
SD 4 Residents	3.6	7.8	3.4	1.9	0.9	6.2	5.9	6.3
San Francisco Residents	41.0	42.2	78.4	24.4	11.9	41.4	69.6	57.8
East Bay Residents	12.9	17.2	8.0	14.3	5.8	14.1	10.5	17.8
North Bay Residents	6.2	4.7	4.8	7.2	3.0	7.7	5.6	6.5
South Bay Residents	11.2	2.6	7.1	12.3	2.1	6.6	6.8	9.2
Out of Region Residents	28.8	33.3	1.7	41.9	77.3	30.2	7.6	8.8

FIGURE 4 - MODES USED TO SD 1 RETAIL & RESTAURANT SITES, BY RESIDENCE AND TRIP ORIGIN

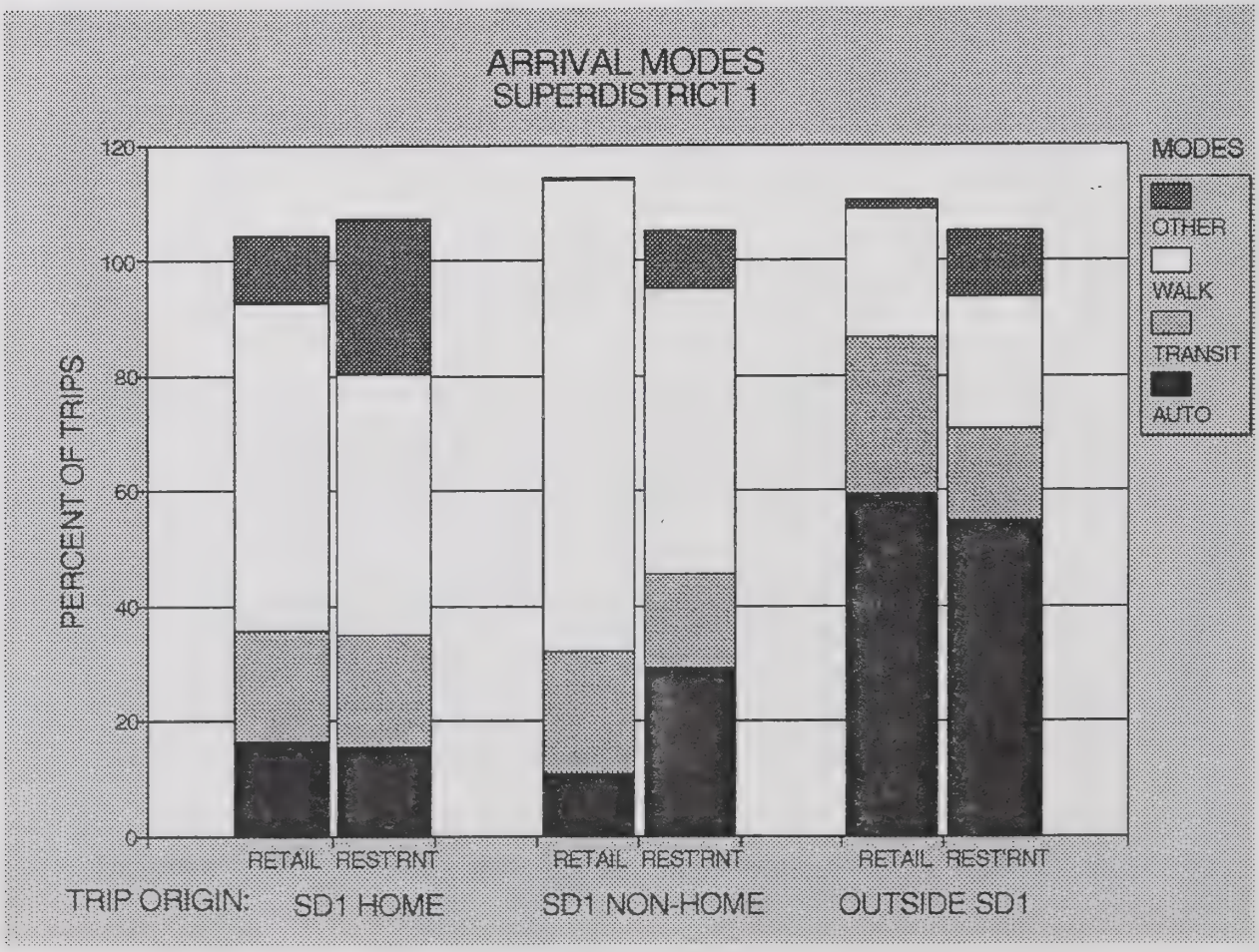


TABLE 6 - ARRIVAL MODES USED BY PLACE OF RESIDENCE AND LAND USE, SD 1 SITES

		Retail	Large Retail	Supermarket	Restaurant	Hotel	Cultural	Institutional	Office
SD 1 Residents	Auto	16.9	16.7	15.4	23.6	26.1	27.1	6.9	6.3
	Transit	31.0	27.8	8.7	25.5	21.7	20.6	18.9	27.8
	Walk	59.2	55.6	72.6	56.4	45.7	52.4	74.4	53.2
	Other	1.4	5.6	5.8	0.0	6.5	4.1	4.2	19.0
SD 2 Residents	Auto	19.0	21.4	25.0	38.7	25.0	32.7	32.4	20.8
	Transit	35.7	53.6	15.6	29.0	60.0	38.9	32.9	19.5
	Walk	57.1	42.9	68.8	29.0	65.0	30.9	36.0	44.2
	Other	4.8	0.0	9.4	3.2	10.0	8.6	5.0	26.0
SD 3 Residents	Auto	34.1	20.0	37.5	23.9	55.6	46.8	36.5	15.1
	Transit	43.2	65.0	4.2	28.3	4.4	37.2	38.6	34.2
	Walk	54.5	40.0	75.0	47.8	26.7	17.9	28.9	37.0
	Other	4.5	0.0	4.2	4.3	13.3	5.8	7.1	20.5
SD 4 Residents	Auto	13.3	20.0	8.3	54.5	55.6	34.9	45.8	32.1
	Transit	20.0	66.7	16.7	18.2	22.2	45.3	27.7	32.1
	Walk	73.3	40.0	100.0	9.1	0.0	22.1	25.3	28.6
	Other	0.0	0.0	0.0	18.2	22.2	4.7	9.6	14.3
East Bay Residents	Auto	31.5	30.3	7.1	46.4	44.8	53.3	32.7	49.4
	Transit	29.6	54.5	39.3	19.0	27.6	30.3	43.5	29.1
	Walk	59.3	30.3	100.0	38.1	37.9	25.6	42.2	30.4
	Other	0.0	0.0	0.0	4.8	3.4	3.6	1.4	3.8
North Bay Residents	Auto	50.0	55.6	23.5	38.1	66.7	77.6	67.1	65.5
	Transit	30.8	11.1	11.8	21.4	26.7	7.5	13.9	17.2
	Walk	38.5	33.3	76.5	42.9	6.7	14.0	21.5	13.8
	Other	0.0	0.0	0.0	2.4	13.3	4.7	0.0	6.9
South Bay Residents	Auto	70.2	60.0	44.0	83.3	61.9	64.8	53.7	43.9
	Transit	4.3	40.0	56.0	9.7	0.0	39.6	29.5	7.3
	Walk	27.7	20.0	72.0	12.5	9.5	6.6	29.5	31.7
	Other	0.0	0.0	0.0	0.0	28.6	2.2	1.1	26.8
Out of Region	Auto	43.1	14.1	14.3	47.2	31.3	32.8	46.8	54.8
	Transit	9.8	18.8	0.0	10.4	7.6	33.0	8.1	35.7
	Walk	43.9	68.8	85.7	22.0	25.3	34.9	36.0	23.8
	Other	4.1	1.6	0.0	25.6	41.9	13.9	18.0	2.4

Each cell shows the percentage of residents of each area visiting each land use using the given mode. For example, 19% of Superdistrict 2 residents visiting retail sites in Superdistrict 1 use autos at some point in the trip. Because visitors can use more than one mode, the four mode choices for each residence/land use combination can add to more than 100%.

TABLE 7 - ARRIVAL MODES BY TRIP ORIGIN, LINKAGE, MODE, LAND USE, SD 1 SITES

Trip Origin	Linkage	Mode	Retail	Large Retail	Supermarket	Restaurant	Hotel	Cultural	Institu-tional	Office
SD 1	Home	Auto	16.7	8.8	0.0	15.5	23.3	22.9	9.6	6.3
		Transit	19.0	11.8	2.6	19.6	6.7	29.9	24.5	33.3
		Walk	57.1	79.4	100.0	45.4	66.7	45.8	61.1	62.5
		Other	11.9	2.9	0.0	26.8	3.3	11.2	8.3	8.3
	Work	Auto	14.0	8.3	5.1	12.8	37.6	16.8	11.4	16.9
		Transit	18.0	45.8	0.0	5.3	17.7	18.2	16.6	12.2
		Walk	82.6	62.5	96.6	80.9	41.1	64.2	77.7	46.6
		Other	0.0	0.0	3.4	2.1	14.9	6.6	2.6	27.0
	Not Home or Work	Auto	7.8	0.0	17.8	45.5	23.5	16.8	4.3	3.2
		Transit	24.4	5.9	11.5	27.3	12.7	36.0	11.9	32.3
		Walk	81.1	94.1	67.2	18.2	64.7	47.2	86.4	67.7
		Other	1.1	5.9	6.3	18.2	9.8	16.0	2.6	3.2
Out of SD 1	Home	Auto	63.4	35.8	33.3	73.4	28.2	51.1	50.1	48.8
		Transit	29.3	58.5	71.4	19.8	5.1	41.0	49.5	52.5
		Walk	19.5	18.9	88.1	8.7	2.6	20.2	13.1	21.3
		Other	3.7	0.0	2.4	4.9	65.0	5.8	6.6	3.8
	Work	Auto	48.4	20.0	66.7	31.7	44.8	37.9	68.3	51.9
		Transit	29.0	50.0	0.0	22.0	6.3	40.9	18.3	17.0
		Walk	29.0	40.0	66.7	48.8	11.5	21.2	18.3	19.8
		Other	0.0	0.0	0.0	6.5	42.7	7.6	4.9	19.8
	Not Home or Work	Auto	65.9	34.1	47.1	59.3	39.4	63.3	42.7	48.6
		Transit	23.1	43.2	5.9	5.9	10.9	25.1	20.2	45.7
		Walk	18.7	40.9	44.1	12.7	10.7	11.3	35.4	11.4
		Other	1.1	0.0	5.9	22.0	45.8	5.8	6.2	5.7

Out of SD 1 includes SD 2, SD 3, SD 4, EB, SB, NB, Out of Region.

Not Home or Work includes Shopping, School, Hotel, Recreation, and Other.

Other Mode includes Taxi, Limo, Tour bus, Bicycle, Motorcycle, and Other.

Because visitors can use more than one mode, the four mode choices for each origin/linkage/land use combination can add to more than 100%.

TABLE 8 -- MODES USED BY VISITORS TO ARRIVE AT SITES IN SUPERDISTRICT 1

	Retail	Large Retail	Super-market	Rest-aurant	Hotel	Cultural	Institu-tional	Office
Auto Driver	18.5	32.9	15.6	22.7	18.2	23.4	21.3	25.4
Auto Pass.	17.8	0.1	3.7	23.9	16.5	18.8	8.4	6.1
Taxi	1.2	0.8	1.7	5.4	14.9	3.0	3.5	2.7
Limo	0.0	0.0	0.0	1.9	5.3	0.6	0.1	0.0
MUNI	15.6	23.7	8.5	9.6	8.7	22.7	18.9	16.6
BART	5.9	12.9	4.8	4.6	1.4	7.8	6.0	7.4
CalTrain	0.2	0.4	0.6	0.3	0.0	0.4	0.6	0.4
Sam Trans	0.0	0.2	0.0	0.0	0.1	0.3	0.2	0.7
GG Transit	1.2	0.5	0.3	0.3	0.0	0.2	0.4	0.7
AC Transit	0.0	0.1	0.3	0.3	0.0	0.1	0.4	0.4
Ferry	0.0	0.4	0.6	1.0	0.6	0.0	0.0	0.0
Tour Bus	0.0	0.0	0.0	1.9	12.9	0.7	0.7	0.2
Walk	49.8	23.3	75.9	29.9	26.7	29.1	46.7	36.4
Bicycle	0.5	0.0	1.1	0.0	0.0	0.9	0.6	9.2
Motor cycle	0.7	0.0	1.7	0.0	0.2	0.9	0.1	3.4
Other	0.0	5.1	0.0	3.4	1.7	1.6	0.3	0.4

Because many trips use more than one mode, the columns will add to more than 100%.

TABLE 9 -- MODES USED BY VISITORS TO DEPART SITES IN SUPERDISTRICT 1

	Retail	Large Retail	Super-market	Rest-aurant	Hotel	Cultural	Institu-tional	Office
Auto Driver	17.8	15.6	13.6	22.7	15.3	22.9	20.4	27.0
Auto Pass.	18.0	6.8	3.7	21.5	11.0	17.3	8.0	4.5
Taxi	1.7	3.6	3.1	6.4	14.2	2.9	3.0	2.9
Limo	0.0	0.0	0.0	2.0	3.1	0.4	0.1	0.0
MUNI	12.8	20.3	5.7	9.6	13.1	22.8	17.0	15.3
BART	4.3	16.1	0.3	3.9	1.3	6.6	6.2	7.6
CalTrain	0.2	0.0	0.0	0.3	0.0	0.4	0.6	0.4
Sam Trans	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.7
GG Transit	0.2	0.5	0.0	0.8	0.0	0.2	0.4	0.7
AC Transit	0.2	0.0	0.0	0.2	0.0	0.0	0.6	0.9
Ferry	0.0	0.0	0.0	0.8	0.4	0.1	0.0	0.0
Tour Bus	0.0	0.0	0.0	0.8	10.3	0.7	0.4	0.0
Walk	52.8	47.9	75.1	28.6	40.0	30.7	49.5	33.7
Bicycle	0.5	0.0	1.1	0.0	0.0	0.5	0.6	9.0
Motor cycle	0.7	0.0	1.7	0.0	0.2	1.1	0.1	3.6
Other	0.0	0.0	0.0	5.6	2.1	2.9	0.3	0.0

Because many trips use more than one mode, the columns will add to more than 100%.

II.B. SUPERDISTRICT 2

Tables 10 through 14 describe trips to Superdistrict 2. Superdistrict 2 is the area to the west of Superdistrict 1, reaching to the Pacific Ocean and as far south as the southern boundary of Golden Gate Park. It includes neighborhoods from Pacific Heights and the Western Addition to the Richmond District.

Table 10 describes visitors according to place of residence. It shows that Superdistrict 2 supermarkets, retail establishments, and restaurants drew over half of their visitors from Superdistrict 2 residents. Large retail establishments, cultural sites, and institutional sites drew more than half of their visitors from outside of the Superdistrict. Cultural sites in Superdistrict 2 include the museums in Golden Gate Park and some large movie theaters, as well as smaller sites. As a result, large proportions of the visitors to cultural sites came from outside of the Superdistrict: 25% of visitors were residents of Superdistrict 2, 40% were residents of other Superdistricts, 19% were East Bay residents and 33% were from outside of the region. This Superdistrict also includes some large medical and educational sites. As a result, institutional sites received relatively large proportions of their visitors from outside of the Superdistrict but within the region: 15% of these visitors were residents of Superdistrict 1, 17% of Superdistrict 3, 12% of Superdistrict 4. Seven percent of visitors to Superdistrict 2 institutions came from the East Bay, 9% from the South Bay.

Table 11 shows the proportions of people using different travel modes to arrive at Superdistrict 2 sites, depending on their place of residence. Table 12 and Figure 5 show the same information, organized instead by the trip's origin and its linkages. (On both of these tables, people could have recorded more than one mode, for instance, BART and MUNI, so the totals add to more than 100% of all trips.) Table 11 shows:

* Generally, most trips were made by auto. Those who live in Superdistrict 2 are usually less likely to use autos than those who visit from outside of the Superdistrict. Superdistrict 2 residents use autos for 41% of their visits to retail sites, and 39% of their visits to restaurants. They are also much more likely to walk to retail and restaurant sites than are residents of other areas, except for Superdistrict 3 residents who often walk to Superdistrict 2 restaurants.

* Visitors from the South Bay had the highest auto usage; over 73% of their trips to each type of land use used autos.

* People visiting cultural and institutional sites in Superdistrict 2 had higher rates of transit use than visitors to other land uses, regardless of their place of residence.

* Transit accounted for over a quarter of all trips by Superdistrict 1 visitors to institutional sites, by Superdistrict 2 visitors to institutional or cultural sites, by Superdistrict 3 visitors to cultural sites, by Superdistrict 4 visitors to institutional or cultural sites and by East Bay visitors to institutional or cultural sites.

Table 12 shows that autos were used more than other modes for most kinds of trips. Trips beginning inside of Superdistrict 2, especially those beginning at home, were usually less likely to be made by automobile and more likely to include at least a substantial walking portion. This was most true of trips to restaurants which began in the Superdistrict. Only 16% of home-based trips to restaurants within Superdistrict 2 used cars, and 67% included walking. Trips which began outside of the Superdistrict usually used automobiles, regardless of the linkages. An exception was after-work visitors to cultural sites, only 18% of whom drove. Visitors coming from outside of the Superdistrict were those most likely to use transit to cultural sites; 26% of those coming from home and 28% of those coming from an activity other than home or work used transit.

Tables 13 and 14 show that most of those who use transit to arrive at or depart sites in Superdistrict 2 used MUNI. BART was the only active non-MUNI carrier. Five percent of trips to Superdistrict 2 cultural sites used BART. Nearly 4% of trips to and from institutional establishments used taxis. All other modes (except cars, walking, and MUNI) were used for fewer than 3% of all trips.

TABLE 10 - VISITORS TO SUPERDISTRICT 2 SITES BY PLACE OF RESIDENCE

	Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
SD 1 Residents	12.7	22.5	14.2	6.2	15.3	14.8
SD 2 Residents	55.4	32.5	72.3	50.8	25.4	37.7
SD 3 Residents	11.2	16.3	5.0	12.8	17.1	16.7
SD 4 Residents	10.0	21.3	4.3	7.4	7.2	12.1
San Francisco Residents	89.2	92.5	95.7	77.1	65.0	81.3
East Bay Residents	4.2	0.0	0.8	8.5	19.1	6.7
North Bay Residents	2.3	0.0	1.7	3.5	7.2	2.7
South Bay Residents	4.2	7.5	1.8	10.9	8.7	9.4
Out of Region Residents	10.0	0.0	3.1	15.1	32.7	2.0

FIGURE 5 - MODES USED BY VISITORS TO SUPERDISTRICT 2 RETAIL & RESTAURANT SITES, BY RESIDENCE AND TRIP ORIGIN

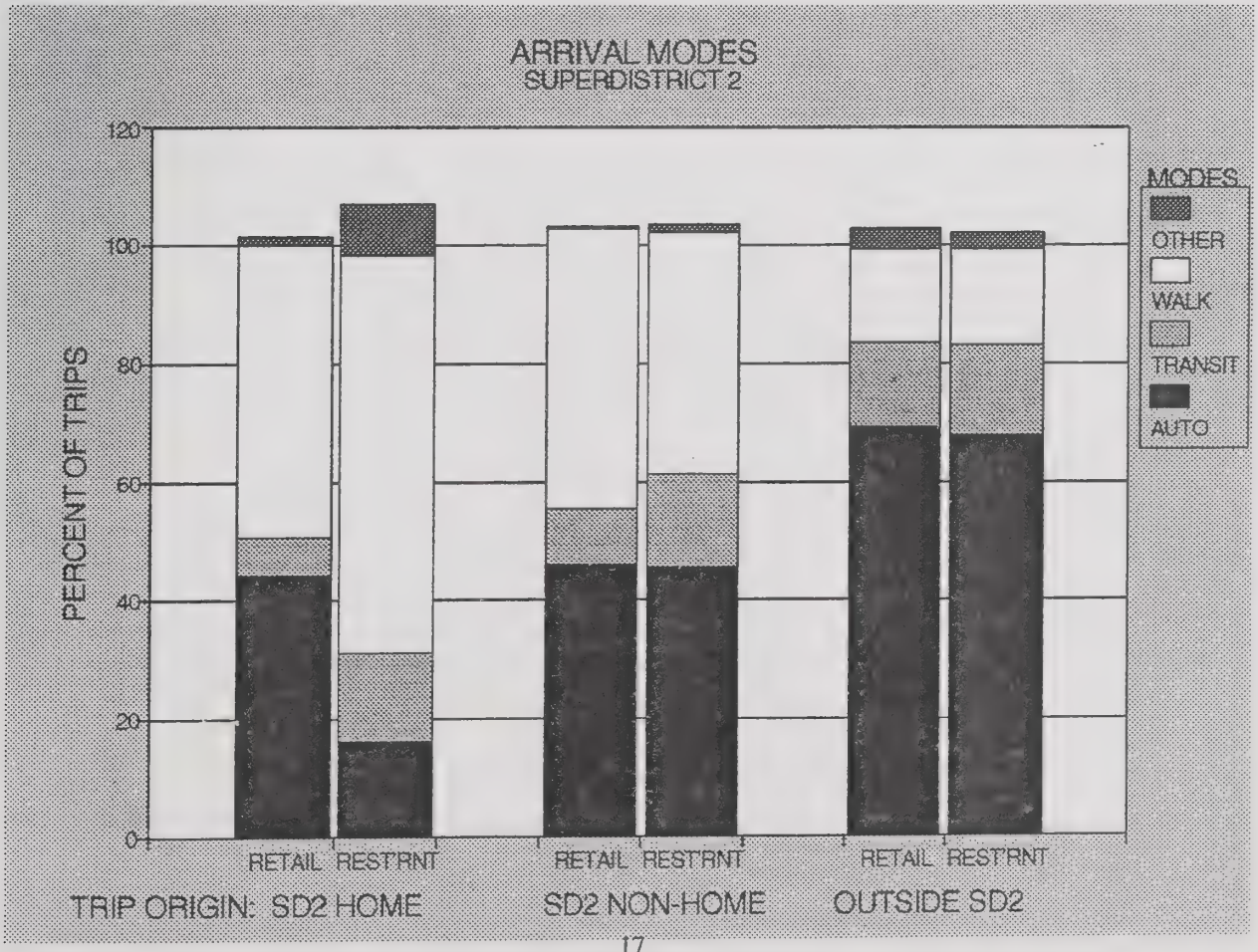


TABLE 11 - ARRIVAL MODES USED BY PLACE OF RESIDENCE AND LAND USE, SD 2 SITES

		Retail	Large	Supermarket	Restaurant	Cultural	Institutional
SD 1 Residents	Auto	63.5	88.9	79.7	66.7	44.4	49.3
	Transit	21.2	11.1	2.4	20.0	24.4	38.4
	Walk	23.1	0.0	16.3	13.3	33.3	23.3
	Other	0.0	0.0	1.6	6.7	7.8	2.7
SD 2 Residents	Auto	40.7	73.1	61.3	38.6	52.0	50.4
	Transit	9.1	26.9	4.0	16.3	27.0	25.4
	Walk	48.5	7.7	33.6	43.5	23.7	21.6
	Other	1.7	0.0	2.1	2.8	0.0	6.9
SD 3 Residents	Auto	70.5	84.6	75.0	23.1	44.6	70.7
	Transit	15.9	0.0	3.8	21.5	28.7	16.3
	Walk	13.6	0.0	21.2	56.9	24.8	5.4
	Other	0.0	15.4	0.0	3.1	9.9	10.9
SD 4 Residents	Auto	86.4	88.2	79.5	73.7	60.9	65.0
	Transit	9.1	11.8	0.0	5.3	30.4	38.3
	Walk	6.8	0.0	13.6	15.8	15.2	10.0
	Other	2.3	0.0	6.8	5.3	0.0	0.0
East Bay Residents	Auto	75.0	0.0	60.0	72.7	46.1	61.8
	Transit	0.0	0.0	40.0	18.2	30.5	55.9
	Walk	25.0	0.0	20.0	15.2	29.7	0.0
	Other	0.0	0.0	0.0	0.0	12.5	5.9
North Bay Residents	Auto	66.7	0.0	90.0	87.5	64.4	88.9
	Transit	0.0	0.0	0.0	0.0	17.8	0.0
	Walk	33.3	0.0	10.0	12.5	22.2	0.0
	Other	0.0	0.0	0.0	0.0	0.0	11.1
South Bay Residents	Auto	88.9	100.0	100.0	94.5	73.1	76.5
	Transit	0.0	0.0	0.0	0.0	15.4	5.9
	Walk	11.1	0.0	0.0	5.5	9.6	13.7
	Other	0.0	0.0	0.0	0.0	5.8	5.9
Out of Region Residents	Auto	60.5	0.0	74.3	57.5	49.8	66.7
	Transit	0.0	0.0	0.0	17.8	22.7	6.7
	Walk	39.5	0.0	20.0	19.2	26.1	13.3
	Other	0.0	0.0	5.7	11.0	8.4	13.3

Each cell shows the percentage of residents of each area visiting each land use using the given mode. For example, 63.5% of Superdistrict 1 residents visiting retail sites in Superdistrict 2 use autos at some point in the trip. Because visitors can use more than one mode, the four mode choices for each residence/land use combination can add to more than 100%.

TABLE 12 - ARRIVAL MODES BY TRIP ORIGIN, LINKAGE, MODE, LAND USE, SD 2 SITES

Trip Origin	Linkage	Mode	Retail	Large Retail	Super-market	Rest-aurant	Cultural	Institu-tional
SD 2	Home	Auto	44.0	100.0	57.7	16.2	42.6	50.0
		Transit	6.9	0.0	0.9	14.7	20.4	30.0
		Walk	49.1	0.0	39.0	67.6	37.0	14.2
		Other	1.7	0.0	1.6	8.8	3.7	11.7
	Work	Auto	64.6	0.0	73.4	36.8	50.0	39.5
		Transit	4.2	0.0	3.1	15.1	12.5	18.4
		Walk	31.3	0.0	21.9	49.1	25.0	28.9
		Other	0.0	0.0	1.6	0.0	12.5	15.8
	Not Home or Work	Auto	26.6	55.6	68.0	54.0	55.1	45.8
		Transit	15.6	44.4	7.2	16.8	27.6	16.7
		Walk	64.1	22.2	27.1	32.8	25.5	40.3
		Other	0.0	0.0	2.2	2.9	0.0	2.8
Out of SD 2	Home	Auto	65.4	87.1	68.4	62.0	64.0	71.9
		Transit	19.2	16.1	2.3	16.7	26.4	26.7
		Walk	11.5	0.0	26.3	19.4	15.0	2.2
		Other	7.7	0.0	3.0	4.6	4.5	3.7
	Work	Auto	67.6	85.7	85.2	62.0	18.3	75.9
		Transit	10.8	14.3	5.7	17.7	24.8	18.5
		Walk	18.9	0.0	6.8	22.8	67.0	1.9
		Other	2.7	0.0	2.3	0.0	4.6	5.6
	Not Home or Work	Auto	74.2	81.0	78.9	79.2	54.3	62.2
		Transit	13.3	14.3	9.2	11.7	27.6	34.0
		Walk	17.5	0.0	11.9	6.5	12.9	16.7
		Other	0.0	9.5	3.7	3.9	13.3	4.5

Out of SD 2 includes SD 1, SD 3, SD 4, EB, SB, NB, Out of Region.
Not Home or Work includes Shopping, School, Hotel, Recreation, and Other.
Other Mode includes Taxi, Limo, Tour bus, Bicycle, Motorcycle, and Other.
Because visitors can use more than one mode, the four mode choices for each origin/linkage/land use combination can add to more than 100%.

TABLE 13 - MODES USED BY VISITORS TO ARRIVE AT SITES IN SUPERDISTRICT 2

	Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
Auto Driver	36.1	30.0	51.2	33.0	36.3	40.3
Auto Pass.	16.8	53.8	15.5	22.5	15.6	19.3
Taxi	0.0	0.0	0.1	2.0	1.8	4.0
Limo	0.0	0.0	0.0	0.0	0.2	0.5
MUNI	10.4	13.8	3.5	13.3	16.7	23.8
BART	1.2	0.0	0.2	0.6	5.0	1.6
CalTrain	0.4	0.0	0.0	0.0	1.8	0.0
Sam Trans	0.0	0.0	0.0	0.0	0.5	0.0
GG Transit	0.0	0.0	0.0	0.3	0.5	0.3
AC Transit	0.0	0.0	0.0	0.0	0.0	0.0
Ferry	0.0	0.0	0.0	0.0	0.7	0.0
Tour Bus	0.0	0.0	0.0	0.0	2.1	1.2
Walk	37.7	2.5	28.3	29.4	25.3	15.1
Bicycle	0.8	0.0	0.8	0.0	0.5	0.2
Motor cycle	0.6	2.5	0.9	1.2	1.2	0.2
Other	0.0	0.0	0.4	0.0	0.5	0.3

Because many trips use more than one mode, the columns will add to more than 100%.

TABLE 14 - MODES USED BY VISITORS TO DEPART SITES IN SUPERDISTRICT 2

	Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
Auto Driver	36.7	30.0	51.6	32.5	35.1	39.5
Auto Pass.	17.0	55.0	14.9	21.9	15.2	18.1
Taxi	0.0	0.0	0.1	1.7	1.3	3.3
Limo	0.0	0.0	0.0	0.0	0.0	0.5
MUNI	10.6	12.5	3.5	11.7	17.1	26.6
BART	1.2	0.0	0.0	0.6	5.1	1.6
CalTrain	0.4	0.0	0.0	0.0	1.1	0.0
Sam Trans	0.0	0.0	0.0	0.0	0.5	0.0
GG Transit	0.0	0.0	0.2	0.0	0.5	0.3
AC Transit	0.0	0.0	0.0	0.0	0.0	0.0
Ferry	0.0	0.0	0.0	0.0	0.2	0.0
Tour Bus	0.0	0.0	0.0	0.0	1.9	1.0
Walk	37.3	2.5	29.0	33.7	27.6	14.1
Bicycle	0.8	0.0	0.6	0.0	0.5	0.2
Motor cycle	0.8	2.5	0.9	1.2	1.2	0.2
Other	0.0	0.0	0.4	0.0	0.7	0.3

Because many trips use more than one mode, the columns will add to more than 100%.

II.C. SUPERDISTRICT 3

Tables 15 through 19 describe visitor trips to Superdistrict 3. Superdistrict 3 is the southeast part of San Francisco ranging from Twin Peaks to San Francisco Bay to the San Mateo County line. Table 15 shows the place of residence of visitors to this area. All Superdistrict 3 land uses except for cultural sites drew over half of their visitors from Superdistrict 3 residents. More than 75% of visitors to all land uses were San Francisco residents. About 10% of visitors to retail, large retail, supermarkets, and restaurants came from the South Bay (which is adjacent to this Superdistrict). Less than 6% of visitors to any land use came from outside of the region.

Table 16 shows the proportions of people using different travel modes to arrive at Superdistrict 3 sites, depending on their place of residence. Table 17 shows the same information, organized instead by trip origin and by linkage. (On both of these tables, people could have recorded more than one mode, for instance, BART and MUNI, so the totals add to more than 100% of all trips.) Auto was the predominant mode to all land uses.

Table 16 shows that those who live in Superdistrict 3 were not more or less likely to use autos for trips to Superdistrict 3 sites than were those who visit from outside of the Superdistrict.

* Superdistrict 1 residents were less likely to use cars to visit all land uses other than restaurants in this Superdistrict than were residents of Superdistrict 3. Residents of all areas except Superdistrict 1 were more likely to drive than not. Those who drove less than half the time included Superdistrict 2 residents visiting supermarkets, restaurants, or institutions; Superdistrict 3 residents visiting restaurants or institutions; Superdistrict 4 residents visiting institutions; and East Bay residents visiting restaurants.
* Superdistrict 3 residents were more likely to walk to restaurants (47% of all restaurant trips) than to other land uses, and were more likely to drive to large retail establishments (80% of such trips) than to other land uses.

Table 17 shows that trips beginning within Superdistrict 3 (without regard for the place of residence of the visitor) were usually less likely to be made in private automobiles and more likely to include at least a substantial walking portion. This was most true of trips to restaurants which began in the Superdistrict. Transit was most often used by those coming from a work location inside of the Superdistrict and visiting retail sites (46% of such trips). Over 27% of these work-linked trips to retail, supermarket, cultural and institutional sites used transit. Transit was used by over 20% of those visiting institutional sites, and by over 27% of those visiting institutional sites from outside of the Superdistrict.

Tables 18, 19 and Figure 6 show that auto and walking were the modes most often used to visit most land uses in Superdistrict 3. Most of those who use transit to access sites in Superdistrict 3 used MUNI. MUNI served between 7% and 22% of those visiting Superdistrict 3 sites. BART also serves portions of the area directly. BART was used by 4% to 6% of those arriving at restaurants, cultural, and institutional establishments.

TABLE 15 - VISITORS TO SUPERDISTRICT 3 BY PLACE OF RESIDENCE

	Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
SD 1 Residents	6.7	2.7	6.5	6.4	18.3	7.3
SD 2 Residents	13.9	10.8	7.1	5.0	18.7	6.9
SD 3 Residents	55.2	67.6	65.8	63.9	29.7	60.5
SD 4 Residents	7.4	0.0	3.5	3.9	8.7	1.5
San Francisco Residents	83.2	81.1	82.9	79.3	75.3	76.2
East Bay Residents	1.7	8.1	2.3	3.6	12.0	7.3
North Bay Residents	1.4	0.0	1.1	2.8	2.7	0.4
South Bay Residents	9.4	10.8	10.5	9.8	4.3	15.7
Out of Region Residents	4.3	0.0	3.2	4.5	5.7	0.4

FIGURE 6 - MODES USED BY VISITORS TO SD 3 RETAIL & RESTAURANT SITES, BY RESIDENCE AND TRIP ORIGIN

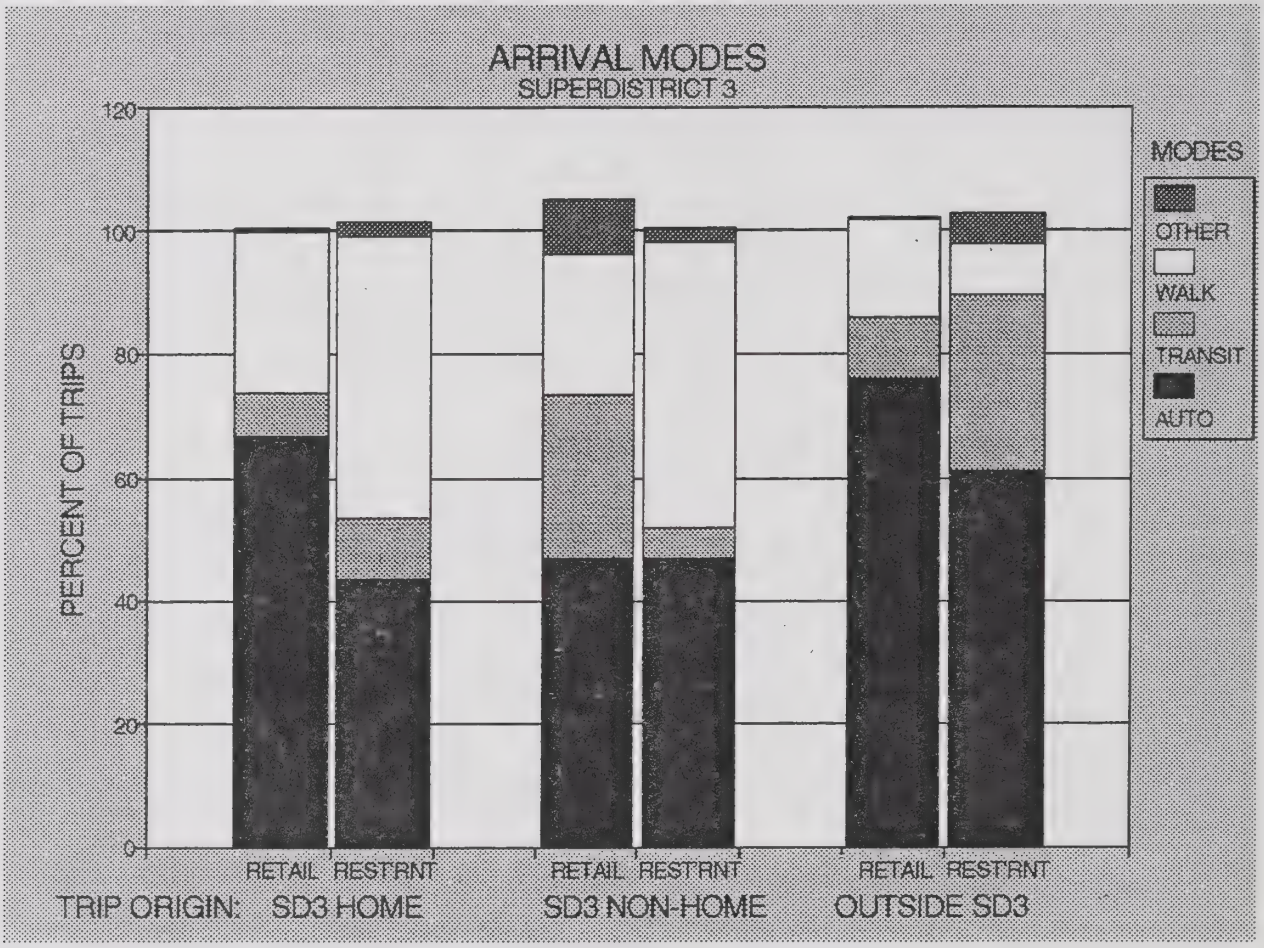


TABLE 16 – ARRIVAL MODES USED BY PLACE OF RESIDENCE AND LAND USE, SD 3 SITES

		Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
SD 1 Residents	Auto	53.5	0.0	41.4	56.5	34.5	15.8
	Transit	14.0	100.0	49.4	21.7	14.5	47.4
	Walk	37.2	100.0	25.3	8.7	36.4	52.6
	Other	2.3	0.0	0.0	13.0	18.2	0.0
SD 2 Residents	Auto	77.3	75.0	46.1	27.8	76.8	27.8
	Transit	12.0	25.0	15.7	33.3	14.3	22.2
	Walk	12.0	25.0	32.6	27.8	3.6	0.0
	Other	0.0	0.0	6.7	11.1	5.4	50.0
SD 3 Residents	Auto	62.1	80.0	69.1	41.7	51.7	36.7
	Transit	12.9	16.0	16.0	9.2	28.1	27.2
	Walk	23.7	16.0	20.9	46.5	21.3	31.0
	Other	1.9	0.0	0.5	3.1	5.6	12.0
SD 4 Residents	Auto	91.9	0.0	73.1	92.9	69.2	25.0
	Transit	2.7	0.0	23.1	7.1	15.4	50.0
	Walk	2.7	0.0	3.8	0.0	7.7	50.0
	Other	2.7	0.0	3.8	0.0	7.7	25.0
East Bay Residents	Auto	100.0	100.0	81.8	38.5	72.2	57.9
	Transit	0.0	0.0	0.0	38.5	33.3	57.9
	Walk	0.0	0.0	18.2	23.1	2.8	5.3
	Other	0.0	0.0	0.0	0.0	0.0	5.3
North Bay Residents	Auto	57.1	0.0	100.0	90.0	100.0	100.0
	Transit	85.7	0.0	0.0	20.0	0.0	0.0
	Walk	28.6	0.0	0.0	0.0	0.0	0.0
	Other	0.0	0.0	0.0	0.0	0.0	0.0
South Bay Residents	Auto	64.4	100.0	88.8	82.9	100.0	92.7
	Transit	8.5	0.0	13.3	20.0	0.0	7.3
	Walk	25.4	0.0	6.1	2.9	0.0	2.4
	Other	6.8	0.0	0.0	0.0	0.0	0.0
Out of Region Residents	Auto	61.9	0.0	69.4	50.0	66.7	50.0
	Transit	0.0	0.0	16.7	31.3	22.2	25.0
	Walk	38.1	0.0	8.3	18.8	0.0	25.0
	Other	0.0	0.0	5.6	0.0	5.6	0.0

Each cell shows the percentage of residents of each area visiting each land use using the given mode. For example, 53.5% of Superdistrict 1 residents visiting retail sites in Superdistrict 3 use autos at some point in the trip. Because visitors can use more than one mode, the four mode choices for each residence/land use combination can add to more than 100%.

TABLE 17 - ARRIVAL MODES BY TRIP ORIGIN, LINKAGE, MODE, LAND USE, SD 3 SITES

Trip Origin	Linkage	Mode	Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
SD 3	Home	Auto	66.5	0.0	73.0	43.6	50.0	50.8
		Transit	7.2	0.0	11.2	9.9	30.9	20.2
		Walk	26.3	0.0	19.6	45.9	23.5	35.8
		Other	0.8	0.0	0.5	2.3	2.9	0.0
	Work	Auto	34.6	0.0	50.0	54.5	63.6	57.1
		Transit	46.2	0.0	36.7	9.9	27.3	28.6
		Walk	17.3	0.0	21.7	35.6	0.0	14.3
		Other	7.7	0.0	0.0	2.0	9.1	0.0
	Not Home or Work	Auto	59.0	79.2	66.8	39.2	63.6	10.3
		Transit	7.7	16.7	17.9	1.0	13.6	36.8
		Walk	28.2	16.7	23.8	56.7	22.7	30.8
		Other	10.3	0.0	0.6	3.1	13.6	35.0
Out of SD 3	Home	Auto	73.0	0.0	68.7	62.9	67.0	72.2
		Transit	9.5	0.0	22.4	22.5	14.8	34.3
		Walk	21.2	0.0	14.9	9.0	11.7	9.3
		Other	0.7	0.0	3.0	6.7	8.4	0.0
	Work	Auto	82.1	0.0	81.4	58.8	68.4	61.9
		Transit	7.1	0.0	18.6	35.0	26.3	38.1
		Walk	14.3	0.0	0.0	6.3	0.0	4.8
		Other	0.0	0.0	0.0	2.5	5.3	0.0
	Not Home or Work	Auto	73.3	84.6	61.4	62.0	70.5	42.7
		Transit	13.3	15.4	22.8	28.2	15.9	26.7
		Walk	11.7	15.4	18.9	9.9	13.6	10.7
		Other	1.7	0.0	2.6	5.6	0.0	26.7

Out of SD 3 includes SD 1, SD 2, SD 4, EB, SB, NB, Out of Region.
Not Home or Work includes Shopping, School, Hotel, Recreation, and Other.
Other Mode includes Taxi, Limo, Tour bus, Bicycle, Motorcycle, and Other.
Because visitors can use more than one mode, the four mode choices for each origin/linkage/land use combination can add to more than 100%.

TABLE 18 - MODES USED BY VISITORS TO ARRIVE AT SITES IN SD 3

	Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
Auto Driver	46.7	54.1	40.9	30.6	35.3	24.6
Auto Pass.	19.6	27.0	27.0	20.1	28.6	22.7
Taxi	0.0	0.0	0.3	0.3	0.9	0.0
Limo	0.0	0.0	0.0	0.0	0.0	0.4
MUNI	9.7	16.2	17.8	9.9	13.4	21.6
BART	1.1	0.0	0.2	5.4	5.5	4.9
CalTrain	0.0	0.0	0.0	0.0	0.0	0.0
Sam Trans	0.7	0.0	0.2	0.0	0.0	0.4
GG Transit	0.4	0.0	0.0	0.0	0.0	0.0
AC Transit	0.0	0.0	0.0	0.0	0.0	0.8
Ferry	0.2	0.0	0.0	0.0	0.0	0.0
Tour Bus	0.0	0.0	0.0	0.0	0.0	10.2
Walk	22.3	16.2	19.5	35.4	14.0	25.0
Bicycle	0.2	0.0	0.3	1.7	1.7	0.0
Motor cycle	1.8	0.0	0.5	1.4	3.2	0.4
Other	0.2	0.0	0.0	0.0	0.6	0.8

Because many trips use more than one mode, the columns will add to more than 100%.

TABLE 19 - MODES USED BY VISITORS TO DEPART SITES IN SUPERDISTRICT 3

	Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
Auto Driver	47.4	51.4	40.2	30.6	35.3	27.3
Auto Pass.	19.6	27.0	26.0	19.0	30.0	23.9
Taxi	0.0	0.0	1.6	0.3	1.7	0.0
Limo	0.0	0.0	0.0	0.0	0.0	0.0
MUNI	7.4	18.9	14.8	7.6	10.8	18.2
BART	1.1	0.0	0.0	4.8	3.2	3.4
CalTrain	0.0	0.0	0.0	0.0	0.0	0.0
Sam Trans	1.1	0.0	0.2	0.0	0.0	0.4
GG Transit	0.0	0.0	0.0	0.0	0.0	0.0
AC Transit	0.0	0.0	0.0	0.0	0.0	0.8
Ferry	0.2	0.0	0.0	0.0	0.0	0.0
Tour Bus	0.0	0.0	0.3	0.0	0.0	6.8
Walk	23.9	18.9	19.6	36.8	14.6	25.4
Bicycle	0.2	0.0	0.3	1.7	1.7	0.0
Motor cycle	1.8	0.0	0.3	1.1	2.6	0.4
Other	0.2	0.0	0.0	0.0	0.3	0.4

Because many trips use more than one mode, the columns will add to more than 100%.

II.D. SUPERDISTRICT 4

Tables 20 through 24 describe trips to Superdistrict 4, the southwest section of the City ranging from Twin Peaks to the Pacific Ocean to the San Mateo County line. Table 20 displays the place of residence of visitors. Superdistrict 4 retail sites drew 68% of their visitors from Superdistrict 4 residents. Between 32% and 47% of large retail, supermarket and restaurant visitors were Superdistrict 4 residents. Twenty-six to 28% of visitors to cultural and institutional land uses were Superdistrict 4 residents. Retail, restaurant and supermarket sites had the highest proportions of their visitors, over 86%, consisting of San Francisco residents. Large retail, cultural and institutional sites attracted more out-of-town visitors (over 30%). These visitors to large retail sites (some of which are in the Stonestown regional shopping center) were mostly from the South Bay, adjacent to this Superdistrict. (20% of all large retail visitors were South Bay residents). Nine percent of large retail visitors, 10% of cultural visitors and 8% of institutional visitors came from outside of the region.

Table 21 shows the proportions of people using different travel modes to arrive at Superdistrict 4 sites, depending on their place of residence. Table 22 and Figure 7 show the same information, organized instead by trip origin and linkage. (On both of these tables, people could have recorded more than one mode used during the trip, so the totals add to more than 100% of all trips.) Table 21 shows that:

* Auto was the predominant mode to most land uses in Superdistrict 4.
* Residents of Superdistrict 4 were less likely to drive to most land uses in Superdistrict 4 than those who live outside of the Superdistrict.
* Residents of Superdistrict 4 were much more likely to walk to their Superdistrict 4 destination than were people who are residents of other areas. Forty percent or more of Superdistrict 4 residents walked to retail, restaurant or institutional sites.
* Over 36% of Superdistrict 2 residents visiting restaurants and 26% of Superdistrict 2 residents visiting institutional sites in Superdistrict 4 sites walked. The boundary between these two Superdistricts is very near the Universtiy of California at San Francisco and the nearby commercial areas.
* One-half of Superdistrict 1 and East Bay residents visiting institutional uses in Superdistrict 4 used transit, as did over 25% of Superdistrict 2 and 3 residents. Superdistrict 4 residents were more likely to walk or drive to institutional sites than to use transit.

Table 22 shows that trips beginning inside of Superdistrict 4 were usually less likely to use automobiles and more likely to include a substantial walking portion than trips which began outside of the Superdistrict. An exception was trips to restaurants which were linked to work and began outside of the Superdistrict. Sixty percent of these trips included walking; only 35% used cars.

* Transit was generally used for fewer than 10% of trips *within* the Superdistrict, except for trips to cultural and institutional sites, and trips to large retail sites linked to something other than work.
* Some types of trips from outside of the Superdistrict used transit for 10% or more trips: home-based trips to supermarket, restaurant, cultural and institutional sites; work-based trips to retail, supermarket, restaurant and institutional sites; other trips to restaurant, cultural and institutional sites.
* The types of visits most likely to use transit were non-home or work based trips to institutional sites from outside of the Superdistrict, at 30%.

As shown on Tables 23 and 24, auto trips were used for the largest proportion of trips to Superdistrict 4 sites, usually followed by walking. Most of those who used transit to arrive at or depart sites in Superdistrict 4 used MUNI. The types of sites most often visited by MUNI users were cultural and institutional. Fifteen percent of visitors to cultural sites used MUNI at least one way, as did 20% of visitors to institutional sites. BART served 3% of those visiting institutional establishments.

TABLE 20 - VISITORS TO SUPERDISTRICT 4 BY PLACE OF RESIDENCE

	Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
SD 1 Residents	0.9	2.2	2.1	1.7	6.8	7.6
SD 2 Residents	5.2	11.1	9.7	19.1	13.0	15.3
SD 3 Residents	14.2	21.7	35.0	18.7	23.7	15.5
SD 4 Residents	68.4	32.2	46.0	46.4	26.1	27.4
San Francisco Residents	88.7	67.2	92.8	86.0	69.6	65.8
East Bay Residents	1.4	1.6	1.3	3.8	4.8	11.3
North Bay Residents	1.9	2.2	0.0	0.4	8.2	4.0
South Bay Residents	3.8	20.1	4.2	8.1	7.7	10.8
Out of Region Residents	4.2	8.9	1.7	1.7	9.7	8.1

FIGURE 7 - MODES USED BY VISITORS TO SUPERDISTRICT 4 RETAIL & RESTAURANT SITES BY RESIDENCE AND TRIP ORIGIN

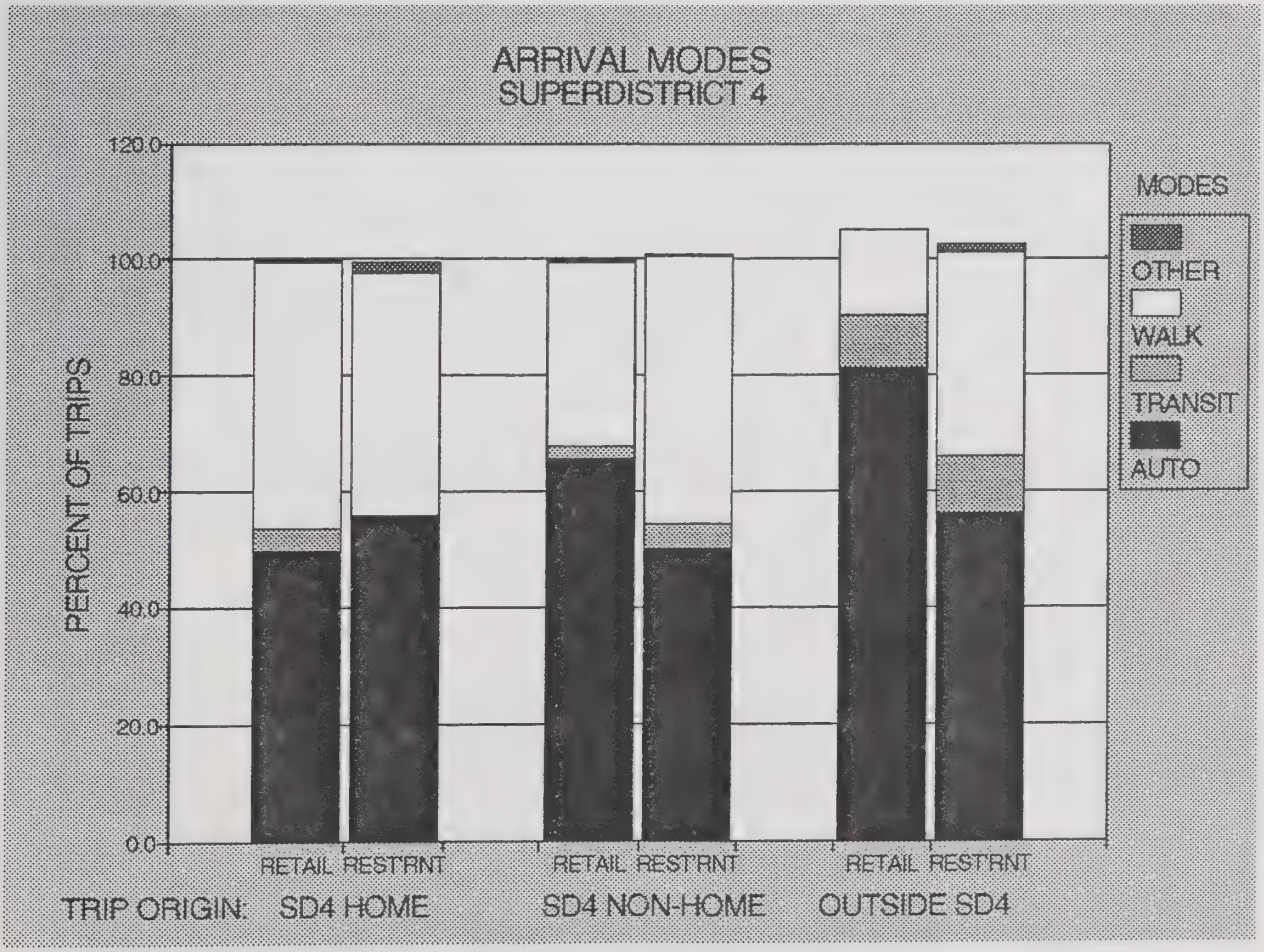


TABLE 21 - ARRIVAL MODES USED BY PLACE OF RESIDENCE AND LAND USE, SD 4 SITES

		Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
SD 1 Residents	Auto	50.0	100.0	75.0	60.0	50.0	48.9
	Transit	50.0	0.0	25.0	40.0	40.9	48.9
	Walk	0.0	0.0	0.0	0.0	9.1	2.1
	Other	0.0	0.0	0.0	0.0	0.0	4.3
SD 2 Residents	Auto	100.0	84.6	86.7	51.6	81.8	43.6
	Transit	0.0	15.4	4.4	10.9	9.1	27.7
	Walk	0.0	7.7	4.4	35.9	0.0	25.5
	Other	0.0	0.0	4.4	3.1	9.1	4.3
SD 3 Residents	Auto	80.7	87.8	85.7	75.6	76.7	57.8
	Transit	0.0	10.0	9.0	4.9	18.9	25.9
	Walk	19.3	3.3	6.0	22.0	4.4	14.1
	Other	0.0	2.2	0.8	0.0	0.0	2.2
SD 4 Residents	Auto	54.8	75.7	85.3	45.1	64.1	37.3
	Transit	6.4	14.5	2.1	3.9	19.4	15.2
	Walk	39.6	10.5	13.6	52.0	15.5	44.9
	Other	0.0	0.0	0.0	1.0	1.0	5.1
East Bay Residents	Auto	100.0	100.0	100.0	22.2	100.0	66.9
	Transit	0.0	0.0	0.0	22.2	0.0	51.8
	Walk	0.0	0.0	0.0	55.6	0.0	0.0
	Other	0.0	0.0	0.0	0.0	0.0	1.4
North Bay Residents	Auto	100.0	100.0	ERR	0.0	96.0	100.0
	Transit	0.0	0.0	ERR	0.0	4.0	0.0
	Walk	0.0	0.0	ERR	0.0	0.0	0.0
	Other	0.0	0.0	ERR	100.0	0.0	0.0
South Bay Residents	Auto	85.7	90.1	100.0	66.7	93.5	92.2
	Transit	0.0	0.0	0.0	6.7	0.0	10.9
	Walk	14.3	9.9	0.0	26.7	0.0	0.0
	Other	0.0	0.0	0.0	0.0	6.5	0.0
Out of Region Residents	Auto	100.0	91.7	75.0	100.0	95.5	82.4
	Transit	0.0	8.3	0.0	0.0	4.5	10.6
	Walk	0.0	0.0	25.0	0.0	0.0	7.1
	Other	0.0	0.0	0.0	0.0	0.0	3.5

Each cell shows the percentage of residents of each area visiting each land use using the given mode. For example, 50% of Superdistrict 1 residents visiting retail sites in Superdistrict 4 use autos at some point in the trip. Because visitors can use more than one mode, the four mode choices for each resident/land use combination can add to more than 100%.

TABLE 22 - ARRIVAL MODES BY TRIP ORIGIN, LINKAGE, MODE, LAND USE, SD 4 SITES

Trip Origin	Linkage	Mode	Retail	Large Retail	Super-market	Restaurant	Cultural	Institutional
SD 4	Home	Auto	50.0	0.0	68.1	56.0	64.3	45.9
		Transit	3.7	0.0	6.9	0.0	17.9	25.9
		Walk	46.3	0.0	29.2	42.0	16.7	30.6
		Other	0.0	0.0	0.0	2.0	1.2	7.1
	Work	Auto	66.7	0.0	100.0	62.5	0.0	36.8
		Transit	0.0	0.0	0.0	0.0	100.0	10.5
		Walk	33.3	0.0	0.0	37.5	0.0	52.6
		Other	0.0	0.0	0.0	0.0	0.0	0.0
	Not Home or Work	Auto	65.0	85.5	93.4	37.8	89.7	40.3
		Transit	4.4	14.5	0.0	8.9	3.4	11.7
		Walk	30.7	0.0	4.7	55.6	6.9	45.5
		Other	0.0	0.0	1.9	0.0	0.0	2.6
Out of SD 4	Home	Auto	76.5	0.0	80.4	75.9	83.7	64.8
		Transit	5.9	0.0	10.7	13.3	14.6	21.8
		Walk	17.6	0.0	8.9	10.8	0.0	12.3
		Other	0.0	0.0	0.0	4.8	1.6	4.6
	Work	Auto	83.3	0.0	82.1	35.1	89.5	68.3
		Transit	16.7	0.0	21.4	5.3	0.0	19.3
		Walk	16.7	0.0	3.6	59.6	0.0	9.7
		Other	0.0	0.0	0.0	0.0	10.5	4.1
	Not Home or Work	Auto	83.6	87.9	92.1	56.9	80.3	63.3
		Transit	5.5	8.1	3.2	11.8	12.8	29.6
		Walk	11.0	2.0	4.0	35.3	5.1	11.6
		Other	0.0	2.0	0.8	0.0	1.7	2.0

Outside of SD 4 includes SD 1, SD 2, SD 3, EB, SB, NB, Out of Region.
Not Home or Work includes Shopping, School, Hotel, Recreation, and Other.
Other Mode includes Taxi, Limo, Tour bus, Bicycle, Motorcycle, and Other.
Because visitors can use more than one mode, the four mode choices for each origin/linkage/land use combination can add to more than 100%.

TABLE 23 - MODES USED BY VISITORS TO ARRIVE AT SITES IN SD 4

	Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
Auto Driver	49.5	48.8	61.8	33.4	38.0	40.8
Auto Pass.	16.5	36.2	24.3	20.3	40.2	18.6
Taxi	0.0	0.0	0.0	0.5	0.0	1.9
Limo	0.0	0.0	0.0	0.0	0.0	0.0
MUNI	4.8	9.2	4.5	5.8	14.1	20.0
BART	0.0	0.0	0.5	0.5	0.0	2.7
CalTrain	0.0	0.0	0.0	0.0	0.0	0.2
Sam Trans	0.0	0.0	0.0	0.0	0.0	0.3
GG Transit	0.0	0.0	0.0	0.2	0.0	0.0
AC Transit	0.0	0.0	0.0	0.0	0.0	0.3
Ferry	0.0	0.0	0.0	0.0	0.0	0.0
Tour Bus	0.0	0.0	0.0	0.0	0.0	0.0
Walk	29.8	7.0	9.2	40.0	5.9	18.1
Bicycle	0.0	0.4	0.5	0.0	0.8	1.3
Motor cycle	0.0	0.0	0.2	1.0	1.1	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0

Because many trips use more than one mode, the columns will add to more than 100%.

TABLE 24 - MODES USED BY VISITORS TO DEPART SITES IN SUPERDISTRICT 4

	Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
Auto Driver	49.2	47.1	60.8	33.2	37.0	49.5
Auto Pass.	15.7	35.6	23.8	20.8	37.8	20.1
Taxi	0.3	0.0	0.2	0.5	0.0	1.9
Limo	0.0	0.0	0.0	0.0	0.0	0.0
MUNI	3.7	9.2	3.5	4.6	15.4	19.8
BART	0.5	0.0	0.5	0.5	0.0	0.6
CalTrain	0.0	0.0	0.0	0.5	0.0	0.0
Sam Trans	0.0	0.0	0.0	0.0	0.0	0.0
GG Transit	0.0	0.0	0.0	0.0	0.0	0.0
AC Transit	0.0	0.0	0.0	0.0	0.0	0.0
Ferry	0.0	0.0	0.0	0.0	0.0	0.0
Tour Bus	0.0	0.0	0.0	0.0	0.0	0.0
Walk	30.1	7.5	9.2	39.0	5.3	11.1
Bicycle	0.0	0.4	0.5	0.0	0.8	0.6
Motor cycle	0.0	0.0	0.2	1.0	1.1	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0

Because many trips use more than one mode, the columns will add to more than 100%.

II.E COMPARISONS BETWEEN SUPERDISTRICTS

Tables 10, 15 and 20 show that, as a general rule, in each Superdistrict, residents of the immediate area made up the largest group of visitors to most land uses. This was especially true for retail, supermarket, and restaurant sites, which are the most local-serving uses, usually drawing about half or more of their visitors from within the Superdistrict in which they are located. Figure 8 displays the place of residence of visitors to retail and restaurant sites in each of the Superdistricts.

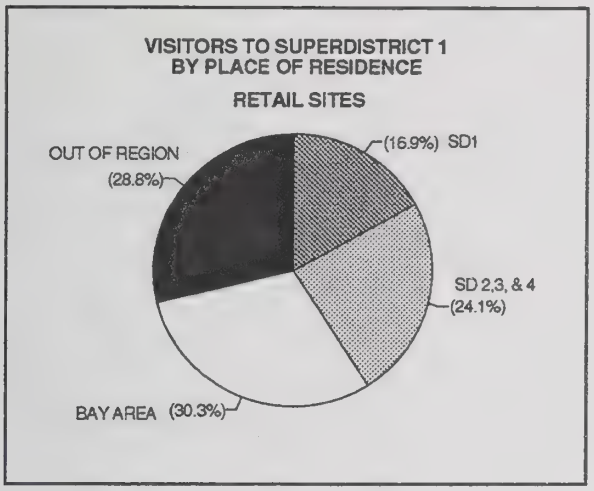
There were some differences between Superdistricts which may be explained by the different nature of the districts and of the specific sites contained in the sample. The most striking difference between Superdistricts is that in virtually all cases in comparison to other Superdistricts, Superdistrict 1 sites draw a larger percentage of their visitors from outside of the Superdistrict, from outside of the City, and from outside of the Region.

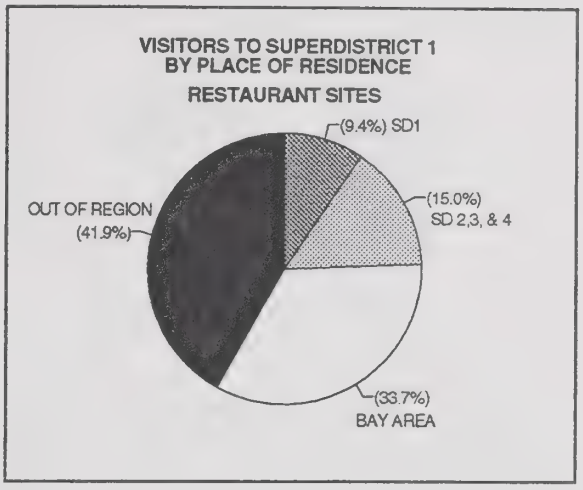
* Retail sites in Superdistricts 2 and 3 received about 55% of visitors from within the Superdistrict. Superdistrict 4 retail sites were even more locally-oriented, with 68% of visitors from within the Superdistrict. In all three of these areas, 83% or more of all retail visitors were San Francisco residents.
* In contrast, 83% of visitors to Superdistrict 1 retail sites were from outside of the Superdistrict, 59% were from outside of the City, and 29% were from outside of the region.

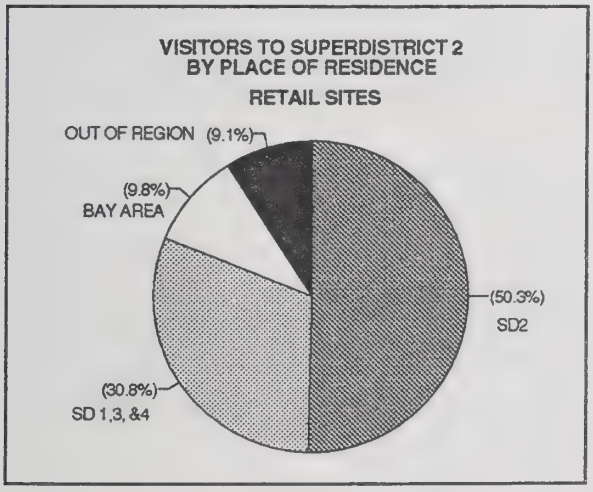
Large retail sites tended to serve larger areas. Ninety-one percent of visitors to large retail sites in Superdistrict 1 were from outside of the Superdistrict, 58% were from outside of the City, 33% were from outside of the region. Because there are few large retail sites in Superdistricts 2, 3, & 4 the nature of the sites helps explain the visitor patterns. Superdistrict 2 large retail drew from all four Superdistricts; 93% of visitors were San Franciscans. This category was dominated by Toys R Us at Geary and Masonic. Superdistrict 3 large retail included Goodman's Lumber and Whole Earth Access. Most of the visitors to this category were Superdistrict 3 residents (68%). The next largest visitor bases for Superdistrict 3 large retail were Superdistrict 2 and the East Bay, with 11% of the visitors being residents of each of these areas. Superdistrict 4 large retail includes some Stonestown stores. Thirty-two percent of their visitors came from within the Superdistrict, and about 21% each from Superdistrict 3 and the South Bay.

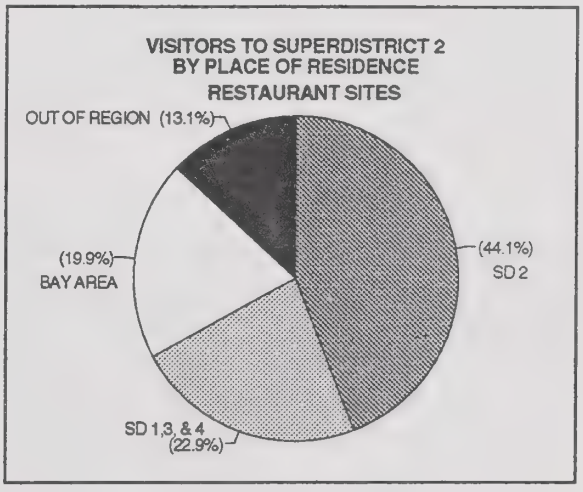
Supermarkets are the most local-serving use in Superdistrict 2, drawing 72% of visitors from the Superdistrict. Supermarkets in Superdistricts 3 and 4 draw more out-of-district visitors (34% and 54%), but supermarkets are still among the most local-serving uses in those areas.

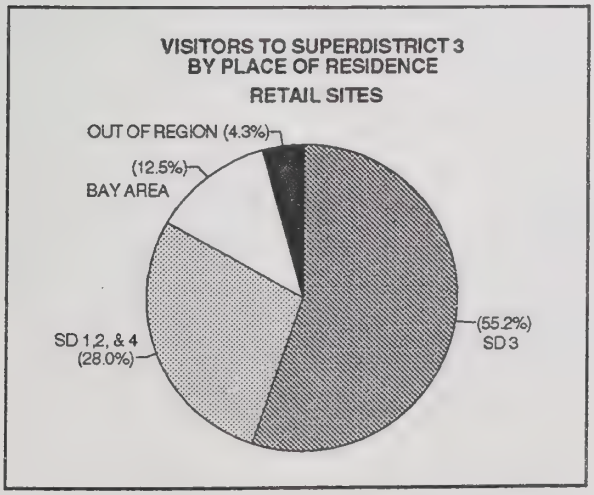
FIGURE 8 - PLACE OF RESIDENCE OF VISITORS TO RETAIL & RESTAURANT SITES

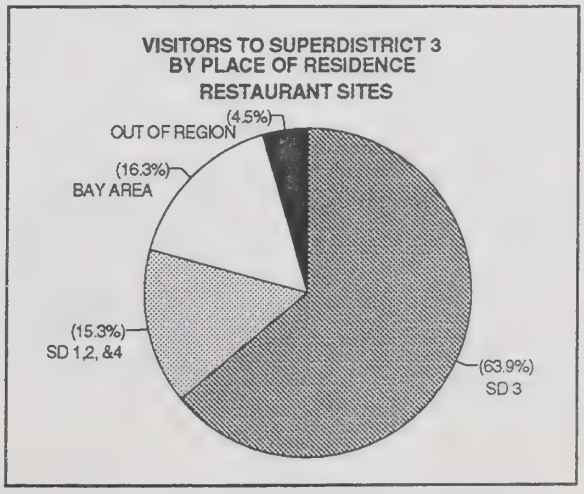


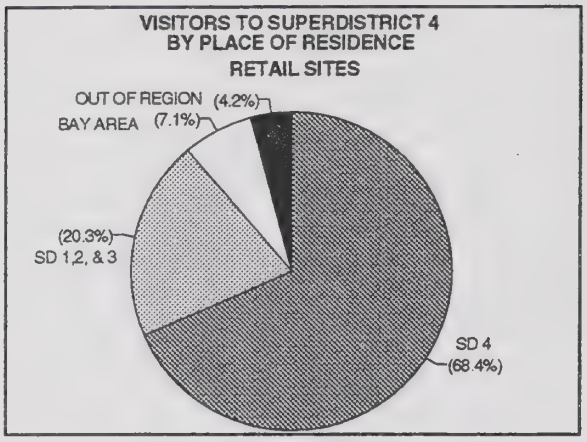


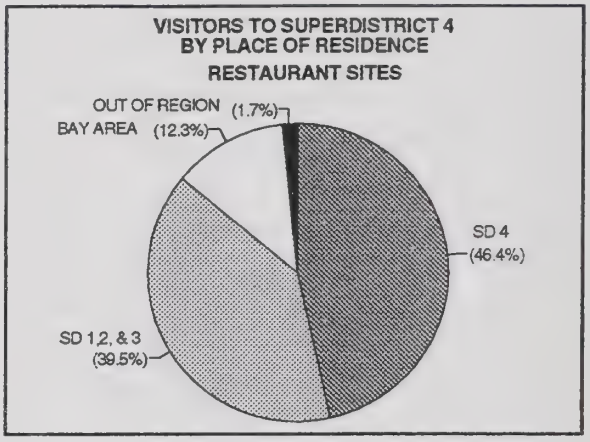












Institutional uses in Superdistricts 2 and 4 had much higher rates of visitors from outside the Superdistrict than did Superdistrict 3. This reflects the location of several large regional institutions like hospitals and universities in Superdistricts 2 and 4. These institutions draw visitors from a wide area.

Tables 6, 11, 16 and 21 show that, in general, in each Superdistrict, residents of the immediate area were less likely to drive to most sites than were visitors from outside of the Superdistrict. This was especially true of restaurant visitors.

Tables 7, 12, 17 and 22 also show that trips which began outside of the Superdistrict were much more likely to use automobiles than were trips within the Superdistrict.

Tables 8, 9, 13, 14, 18, 19, 23 and 24 show that MUNI is the dominant transit carrier in San Francisco. MUNI was used for between 9% and 24% of all trips to Superdistrict 1, for between 10% and 24% of all trips (except for Supermarket trips) to Superdistrict 2, for between 10% and 22% of all trips to Superdistrict 3, and for between 4% and 20% of all trips to Superdistrict 4.

BART was used for around 5% or more of all trips to Superdistrict 1 (except for hotel trips), to Superdistrict 2 cultural sites (which include the museums in Golden Gate Park), and to Superdistrict 3 restaurants, cultural, and institutional uses. (BART serves Superdistrict 3 directly.) No transit carrier (other than MUNI and BART) served more than 3% of any category of visitor trips.

Taxis were more commonly used to arrive at sites in Superdistrict 1 than they were to arrive at sites elsewhere in the City. The highest taxi use was for trips to Superdistrict 1 hotels, at 15% of all trips. Other Superdistrict 1 land uses had taxi use rates of between 1% and 5%. Visitor trips to land uses in other Superdistricts used taxis less than 2% of the time. One exception was institutional uses in Superdistrict 2; 4% of all these trips used taxis. Superdistrict 2 has several large medical complexes, which probably account for the high level of Superdistrict 2 taxi trips.

III. PEAK SEASON TRIPS BY PLACE OF RESIDENCE, TRIP ORIGIN AND TRAVEL MODE

Tables 25 through 29 describe trips to a select group of sites during the times of the year when higher visitor levels are expected. Surveys were conducted over the Labor Day weekend, when out-of-town tourists are in San Francisco in higher than usual numbers, and during the Christmas shopping season between Thanksgiving and Christmas. Most of the sites were in Superdistrict 1; some Superdistrict 2 hotels and museums were included. The sites were not randomly selected; they were chosen because, in the judgement of the Department of City Planning, they are likely to experience higher visitor levels at these times. Consequently, they are not directly comparable to the primary study results in Chapter II. A direct comparison between Large Retail sites that were surveyed during both the primary study and during the peak season is presented below. For more detail on how the sites were selected and the survey carried out, see Appendix A.

Table 25 displays the place of residence of the peak season visitors.

* Over 73% of visitors to retail sites and hotels were from outside of the region; 39% to 50% of visitors to restaurants and cultural sites were from outside of the region. For comparison, the primary study's random sample of Superdistrict 1 found that out-of-region visitors accounted for between 28% and 42% of those visiting these land uses.
* Residents of the four San Francisco Superdistricts each represented fewer than 5% of the visitors to each land use except for restaurant (where 10% of visitors were Superdistrict 1 residents and 5% were Superdistrict 2 residents), and cultural (which drew 8% of its visitors from Superdistrict 2.)
* Fewer than 10% of visitors to retail sites or hotels were San Franciscans.
* 18 to 19% of visitors to restaurants and cultural sites were San Franciscans.

Rates of walking to peak season sites were often lower than during the primary survey. This is probably because the linkage rates, as shown on Table 4, are much lower. While between 10% and 28% of all trips during the primary season were linked to work, fewer than 10% of observed trips to any land use during the peak season study were linked to work. While between 1% and 32% of all trips during the primary season were linked to shopping, fewer than 18% of observed trips to any land use during the peak season study were linked to shopping. The only activities with higher linkage rates during the peak season were hotel (fewer than 14% during the primary survey and up to 38% during the peak season) and recreation (4% to 31% during the primary survey and 19% to 61% during the peak season).

Table 27 shows that trips that began in Superdistrict 1 were most likely to be walking trips. Over 50% of such trips to retail, restaurant and hotel sites included a substantial walking component. Less than about 25% of trips

to these sites used private vehicles. The only exception was cultural sites, most of which were located in Superdistrict 2. About 17% of visitors walked and 46% drove to peak season cultural sites. Most of the retail, restaurant and hotel sites were in the tourist and shopping parts of Superdistrict 1, while the cultural sites included the museums in Golden Gate Park. Trips to retail sites that began in Superdistrict 1, 2, 3, or the East Bay were more likely to use transit than to use autos. Fifty percent or more of trips to restaurants used autos, unless they began in Superdistrict 1 or Superdistrict 4.

Tables 28 and 29 show that most of those who use transit to arrive at or depart the peak season sites used MUNI; the land use with the lowest rate of MUNI use was restaurant, with about 16% of departures using MUNI. The land use with the highest rate of MUNI use was cultural, with 22% of arriving visitors using MUNI. BART carried 5% of retail visitors. Other modes that captured 5% or more of the trips of any land use were taxis used by visitors to retail, restaurants and hotels, and limos and tour buses used by hotel visitors.

TABLE 25 - VISITORS TO SELECTED SITES DURING THE PEAK SEASON BY PLACE OF RESIDENCE

	Retail	Restaurant	Hotel	Cultural
SD 1 Residents	1.3	10.3	3.7	3.1
SD 2 Residents	1.6	5.1	2.8	7.6
SD 3 Residents	1.3	3.1	1.6	3.2
SD 4 Residents	1.1	0.5	1.3	4.4
San Francisco Residents	5.3	19.0	9.5	18.3
East Bay Residents	8.7	5.2	3.7	11.0
North Bay Residents	2.1	3.8	1.5	4.6
South Bay Residents	5.2	3.4	1.7	8.7
Out of Region Residents	73.3	49.5	74.2	39.1

TABLE 26 - MODES USED BY PLACE OF RESIDENCE AND LAND USE, SELECTED PEAK SEASON SITES

		Retail	Restaurant	Hotel	Cultural
SD 1 Residents	Auto	27.8	22.8	15.2	45.5
	Transit	22.2	14.0	13.0	63.6
	Walk	44.4	59.6	58.7	21.2
	Other	11.1	17.5	21.7	3.0
SD 2 Residents	Auto	36.4	85.7	42.9	53.7
	Transit	63.6	17.9	45.7	7.3
	Walk	13.6	7.1	34.3	42.7
	Other	9.1	0.0	11.4	2.4
SD 3 Residents	Auto	27.8	52.9	35.0	58.8
	Transit	22.2	17.6	45.0	41.2
	Walk	27.8	35.3	50.0	17.6
	Other	27.8	11.8	10.0	0.0
SD 4 Residents	Auto	68.8	0.0	50.0	58.3
	Transit	18.8	33.3	56.3	31.3
	Walk	31.3	100.0	43.8	12.5
	Other	0.0	0.0	0.0	0.0
East Bay Residents	Auto	63.9	93.1	46.7	77.3
	Transit	23.8	6.9	35.6	39.5
	Walk	25.4	6.9	22.2	6.7
	Other	7.4	0.0	11.1	0.0
North Bay Residents	Auto	43.3	57.1	61.1	96.0
	Transit	53.3	14.3	22.2	4.0
	Walk	40.0	14.3	33.3	4.0
	Other	0.0	19.0	0.0	0.0
South Bay Residents	Auto	69.9	68.4	52.4	96.8
	Transit	21.9	21.1	38.1	3.2
	Walk	23.3	26.3	42.9	3.2
	Other	5.5	0.0	4.8	0.0
Out of Region Residents	Auto	40.9	44.2	40.1	60.2
	Transit	32.1	19.7	16.9	29.9
	Walk	30.2	33.2	25.0	20.6
	Other	9.4	13.1	30.1	4.0

Because visitors can use more than one mode, the four mode choices for each residence/land use combination can add to more than 100%.

TABLE 27 - MODES USED BY TRIP ORIGIN AND LAND USE, SELECTED PEAK SEASON SITES

Trip Origin	Mode	Retail	Restaurant	Hotel	Cultural
SD 1	Auto	11.7	25.3	24.2	45.5
	Transit	24.3	20.1	22.7	43.6
	Walk	59.3	55.2	53.5	17.3
	Other	5.6	12.3	19.0	4.5
SD 2	Auto	39.8	52.6	13.0	40.0
	Transit	47.4	39.5	71.0	23.8
	Walk	8.9	23.7	49.0	42.3
	Other	4.3	0.0	3.0	4.6
SD 3	Auto	30.8	53.8	29.3	32.5
	Transit	44.5	11.5	22.8	49.1
	Walk	24.1	26.9	51.1	38.6
	Other	1.5	19.2	14.1	5.3
SD 4	Auto	53.6	0.0	25.0	61.9
	Transit	42.6	100.0	66.7	31.0
	Walk	1.0	100.0	50.0	9.5
	Other	3.0	0.0	16.7	0.0
East Bay	Auto	43.9	87.0	59.7	77.8
	Transit	51.7	4.3	33.9	19.4
	Walk	0.6	8.7	12.9	6.9
	Other	4.7	4.3	9.7	0.0
North Bay	Auto	59.7	67.6	47.8	100.0
	Transit	22.3	14.7	26.1	0.0
	Walk	1.3	14.7	21.7	0.0
	Other	17.8	11.8	17.4	0.0
South Bay	Auto	61.0	76.9	44.2	98.6
	Transit	34.8	11.5	5.6	2.1
	Walk	0.7	19.2	8.1	1.4
	Other	3.9	0.0	45.7	0.0
Out of Region	Auto	50.5	56.8	52.4	83.0
	Transit	21.1	13.0	5.3	17.0
	Walk	18.1	21.9	9.5	13.6
	Other	18.1	14.4	34.5	0.7

Because visitors can use more than one mode, the four mode choices for each origin/land use combination can add to more than 100%.

TABLE 28 - MODES USED BY VISITORS TO ARRIVE AT SELECTED SITES DURING PEAK SEASON

	Retail	Restaurant	Hotel	Cultural
Auto Driver	18.1	19.4	20.4	30.0
Auto Passenger	26.5	29.5	19.7	37.1
Taxi	4.4	5.1	7.5	1.6
Limo	0.4	1.3	5.7	0.0
MUNI	21.9	14.3	16.9	22.3
BART	5.3	2.2	1.8	3.6
CalTrain	0.8	0.4	0.1	0.6
SamTrans	0.5	0.0	0.4	0.0
GG Transit	0.1	0.0	0.1	0.0
AC Transit	0.1	0.0	0.0	0.0
Ferry	2.8	0.9	0.7	0.0
Tour Bus	2.1	4.7	9.7	0.2
Walk	29.5	32.6	27.7	17.5
Bicycle	0.0	0.0	0.0	0.0
Motorcycle	0.0	0.0	0.3	0.2
Other	2.0	0.4	3.4	0.2

Because many trips use more than one mode, the columns will add to more than 100%.

TABLE 29 - MODES USED BY VISITORS TO DEPART SELECTED SITES DURING PEAK SEASON

	Retail	Restaurant	Hotel	Cultural
Auto Driver	17.6	18.3	16.3	27.9
Auto Passenger	24.0	29.7	15.0	33.9
Taxi	5.7	6.0	11.5	1.6
Limo	0.2	0.7	3.4	0.0
MUNI	26.3	15.8	19.0	20.9
BART	4.0	1.8	3.1	3.1
CalTrain	0.5	0.2	0.1	0.3
SamTrans	0.5	0.2	0.0	0.0
GG Transit	0.1	0.0	0.0	0.0
AC Transit	0.1	0.0	0.0	0.0
Ferry	3.6	0.4	0.3	0.0
Tour Bus	0.5	1.6	5.7	0.2
Walk	30.3	31.5	37.2	20.6
Bicycle	0.0	0.0	0.0	0.0
Motorcycle	0.0	0.0	0.3	0.2
Other	1.3	0.0	3.3	0.6

Because many trips use more than one mode, the columns will add to more than 100%.

TABLE 30 -- PLACE OF RESIDENCE OF VISITORS TO LARGE RETAIL SITES, PEAK & NON-PEAK

	Non-Peak	Christmas Peak
SD 1 Residents	RETAIL	3.7
SD 2 Residents	7.6	11.6
SD 3 Residents	14.8	10.5
SD 4 Residents	17.9	12.6
San Francisco Residents	18.2	38.4
East Bay Residents	58.5	5.4
North Bay Residents	9.1	1.4
South Bay Residents	3.1	8.4
Out of Region Residents	10.2	8.1

As discussed above, the Peak Season sites are not necessarily representative of all San Francisco establishments. Consequently, the information shown in Tables 25 through 29 is not directly comparable to the information presented elsewhere in this report. Tables 30 to 34 compare the results from eight Large Retail sites that were surveyed both as part of the Primary Sample and during the Christmas peak season.

Table 30 shows that visitors to Large Retail sites during the Christmas peak season are somewhat more likely to be San Francisco residents than visitors to the same sites in non-peak seasons. Sixty-two percent of Christmas season visitors were San Franciscans, while 59% of non-peak visitors were San Franciscans. During the Christmas season a smaller percentage of visitors was from outside of the region, from the East Bay and from the North Bay, while a larger percentage of visitors was from the South Bay.

Table 31 shows the modes used by visitors depending on their place of residence. The most striking difference between the non-peak and the Christmas peak is that residents of all locations are more likely to drive and less likely to walk. For some places of residence the difference was large. Sixty percent of Superdistrict 2 residents drove to these sites during the non-peak season, but 78% drove during the Christmas peak. Seventy percent of Superdistrict 4 residents drove to these sites during the non-peak season, but 80% drove during the Christmas peak. Thirty-five percent of out-of-region residents drove to these sites during the non-peak season, but 61% drove during the Christmas peak. Twenty-six percent of Superdistrict 1 residents walked to these sites during the non-peak season, but 16% walked during the Christmas peak. Twenty-five percent of East Bay residents walked to these sites during the non-peak season, but 10% walked during the Christmas peak. This may be the result of fewer linked trips coming directly from work, which tend to be walking or transit trips.

Table 33 also explains the higher auto use rates shown in the earlier tables. While there are similar proportions of Auto Drivers during the two seasons (about 30%), there is a considerably higher proportion of Auto Passengers during the Christmas peak season (40% instead of 27%). The Auto Occupancy rate to these Large Retail sites is much higher during the Christmas peak season. The proportion of visitors walking during the Christmas peak (10%) is less than half of the non-peak season rate of 22%. Table 34 shows similar results for departure modes.

Residents of Superdistrict 1, the North Bay and the South Bay used transit at higher rates during the peak season. Residents of Superdistricts 2 and 4 used transit at lower rates during the peak season. There was little difference in transit use rates for residents of Superdistrict 3 and the East Bay.

TABLE 31 – MODES USED BY PLACE OF RESIDENCE AND LAND USE, LARGE RETAIL SITES, PEAK & NON-PEAK

Place of Residence	Mode	Non-Peak	Christmas Peak
SD 1 Residents	Auto	57.6	63.2
	Transit	18.8	39.1
	Walk	25.9	16.1
	Other	2.4	2.3
SD 2 Residents	Auto	59.5	77.5
	Transit	32.1	16.6
	Walk	20.2	8.1
	Other	0.0	0.7
SD 3 Residents	Auto	72.3	80.5
	Transit	20.9	22.0
	Walk	13.1	7.7
	Other	2.9	0.4
SD 4 Residents	Auto	69.9	80.3
	Transit	21.3	11.2
	Walk	13.0	10.2
	Other	0.0	0.7
East Bay Residents	Auto	41.8	56.3
	Transit	45.6	45.2
	Walk	25.3	9.5
	Other	0.0	0.0
North Bay Residents	Auto	69.2	84.4
	Transit	7.7	21.9
	Walk	23.1	3.1
	Other	0.0	0.0
South Bay Residents	Auto	89.3	89.8
	Transit	3.1	6.1
	Walk	9.2	5.1
	Other	0.0	0.0
Out of Region Residents	Auto	35.2	61.1
	Transit	15.9	28.4
	Walk	50.0	21.1
	Other	1.1	1.1

Because visitors can use more than one mode, the four mode choices for each residence/land use combination can add to more than 100%.

TABLE 32 – MODES USED BY TRIP ORIGIN AND LAND USE, LARGE RETAIL SITES, PEAK & NON-PEAK

Trip Origin	Mode	Non-Peak	Christmas Peak
SD 1	Auto	29.6	47.6
	Transit	17.4	34.6
	Walk	51.3	37.0
	Other	1.7	1.0
SD 2	Auto	56.5	80.1
	Transit	28.3	21.1
	Walk	15.2	3.8
	Other	0.0	0.8
SD 3	Auto	67.4	86.0
	Transit	18.6	14.5
	Walk	13.2	4.5
	Other	0.8	0.4
SD 4	Auto	70.5	80.2
	Transit	18.1	14.2
	Walk	10.1	8.3
	Other	1.3	0.3
East Bay	Auto	41.9	58.5
	Transit	46.5	50.0
	Walk	11.6	2.1
	Other	0.0	0.0
North Bay	Auto	92.3	100.0
	Transit	7.7	0.0
	Walk	0.0	0.0
	Other	0.0	0.0
South Bay	Auto	90.1	92.1
	Transit	2.5	5.3
	Walk	7.4	3.7
	Other	0.0	0.0
Out of Region	Auto	66.7	61.4
	Transit	10.3	30.7
	Walk	23.1	13.9
	Other	0.0	3.0

Because visitors can use more than one mode, the four mode choices for each origin/land use combination can add to more than 100%.

TABLE 33 – MODES USED BY VISITORS TO ARRIVE AT LARGE RETAIL SITES, PEAK & NON-PEAK

Mode	Non-Peak	Christmas Peak
Auto Driver	35.1	35.2
Auto Passenger	27.4	40.4
Taxi	0.2	0.1
Limo	0.0	0.1
MUNI	15.5	14.9
BART	5.5	4.4
CalTrain	0.0	0.6
SamTrans	0.0	0.2
GG Transit	0.0	0.0
AC Transit	0.0	0.0
Ferry	0.0	0.3
Tour Bus	0.2	0.0
Walk	21.8	10.2
Bicycle	0.2	0.1
Motorcycle	0.4	0.3
Other	0.0	0.0

Because many trips use more than one mode, the columns will add to more than 100%.

TABLE 34 -- MODES USED BY VISITORS TO DEPART LARGE RETAIL SITES, PEAK & NON-PEAK

Mode	Non-Peak	Christmas Peak
Auto Driver	33.8	34.3
Auto Passenger	27.7	38.6
Taxi	1.3	0.3
Limo	0.0	0.1
MUNI	14.3	13.6
BART	5.7	3.7
CalTrain	0.0	0.3
SamTrans	0.0	0.3
GG Transit	0.2	0.0
AC Transit	0.0	0.0
Ferry	0.0	0.1
Tour Bus	0.0	0.0
Walk	21.8	13.9
Bicycle	0.2	0.1
Motorcycle	0.4	0.3
Other	0.0	0.0

Because many trips use more than one mode, the columns will add to more than 100%.

IV. AUTO OCCUPANCY RATES

As shown in Table 30, out-of-region visitors were more likely than residents of the region to have high occupancy rates, especially if they were traveling to Superdistrict 1. They had an average of over three per vehicle to Superdistrict 1 retail, restaurant and cultural sites and to Superdistrict 4 cultural sites. San Franciscans had generally higher occupancy rates when traveling to large retail sites. Superdistrict 2 large retail attracted visitors with average vehicle occupancies of almost three or more among San Franciscans. This may be explained by the presence of a large toy store in this category.

Visitors to supermarkets had lower auto occupancy rates, in most cases less than two persons per vehicle.

TABLE 35 - AUTO OCCUPANCY RATES BY LAND USE AND PLACE OF RESIDENCE

		SD 1 Residents	SD 2 Residents	SD 3 Residents	SD 4 Residents	E.B. Residents	N.B. Residents	S.B. Residents	Out of Reg'n
Retail	SD 1	1.64	1.50	1.86	1.50	2.75	2.27	3.94	3.12
	SD 2	2.28	1.50	2.25	2.54	2.33	2.25	3.57	1.87
	SD 3	1.86	1.55	2.17	1.92	1.83	1.50	2.09	1.75
	SD 4	1.00	1.40	1.75	1.77	1.00	3.00	1.50	2.71
Large Retail	SD 1	1.67	1.50	3.00	2.00	1.33	2.00	2.00	2.00
	SD 2	3.88	3.00	2.82	3.13	N.D.	N.D.	2.50	N.D.
	SD 3	N.D.	2.67	2.80	N.D.	2.67	N.D.	2.50	N.D.
	SD 4	1.71	2.12	2.28	1.99	1.60	2.33	2.33	2.96
Supermarket	SD 1	1.09	1.43	1.00	1.00	3.00	1.00	1.09	N.D.
	SD 2	1.46	1.56	1.78	1.47	2.00	1.57	1.56	2.31
	SD 3	2.50	1.50	1.75	1.47	1.91	1.00	2.00	1.93
	SD 4	1.25	1.95	1.88	1.57	1.00	N.D.	1.70	1.00
Restaurant	SD 1	2.62	2.17	3.09	2.00	2.61	1.75	2.56	3.76
	SD 2	1.64	2.04	1.58	2.93	1.57	1.92	2.50	1.78
	SD 3	2.00	2.00	2.08	2.23	1.40	2.11	2.16	1.88
	SD 4	2.00	1.88	2.61	2.17	2.00	N.D.	2.67	2.50
Hotel	SD 1	2.00	3.00	2.00	2.80	2.33	2.00	2.50	2.88
	SD 2	1.00	N.D.	N.D.	N.D.	N.D.	N.D.	1.00	1.50
	SD 3	N.D.	N.D.	1.00	N.D.	N.D.	N.D.	N.D.	1.78
	SD 4	N.D.	N.D.	N.D.	N.D.	N.D.	1.00	2.00	2.17
Cultural	SD 1	1.77	2.14	1.93	2.25	2.68	2.71	2.43	3.65
	SD 2	2.17	2.39	2.08	2.47	2.63	2.29	2.00	2.49
	SD 3	2.12	2.19	2.14	2.96	2.78	2.13	2.44	2.09
	SD 4	1.50	2.60	2.22	2.46	1.90	2.06	2.07	3.24
Institutional	SD 1	1.66	1.77	1.63	1.67	1.57	1.79	1.67	2.56
	SD 2	1.96	1.70	2.29	1.55	2.31	1.50	2.21	2.00
	SD 3	1.67	1.25	3.26	1.67	3.09	N.D.	2.35	1.00
	SD 4	1.33	1.30	1.35	1.40	1.38	1.64	1.41	2.29
Office	SD 1	2.00	1.07	1.75	1.22	1.67	1.63	2.59	1.93

N.D. is noted where no auto drivers to these sites, with this place of residence, were interviewed.

V. TRIP GENERATION RATES

Tables 36 to 38 present the average number of trips observed per thousand square feet during the peak hours of the sites and the daily average number of trips calculated based on that number. They were calculated by determining the peak hour of the longer time period observed, and applying factors from the *ITE Trip Generation Manual (5th Edition)* to arrive at daily rates. (For more detail about the calculations of the daily trip rates, see Appendix A.) These tables show the numbers of trips to different land uses per 1,000 square feet, with the exception that the number of trips to hotels is calculated per room.

These tables show the mean (average) trip rate for each land use, weighted to account for differences across Superdistricts. These averages are useful for making predictions about the usual flow of traffic in and out of sites. There was considerable variability in the numbers of trips actually observed in each of the land uses. In other words, in each land use there were sites with considerably more and considerable fewer trips than the average. Appendix B illustrates the variability of the results by showing the distribution of sites according to their trip rates.

Tables 36 and 37 show that for most land uses, sites in Superdistrict 1 generate a higher rate of trips than sites in the other Superdistricts. The difference is largest in retail, supermarket and restaurant. Large retail establishments outside of Superdistrict 1 had a higher trip rate, perhaps because this category included some high-volume warehouse-type establishments outside of downtown.

On a citywide basis, institutional sites generated the lowest trip rates, at about 100 trips per 1,000 square feet per day. Large retail sites generated about 130 visitor trips per 1,000 square feet per day. Cultural, retail and supermarket sites each generated about 340 to 360 trips per 1,000 square feet per day. The highest trip rate was observed in restaurants, at 730 trips per 1,000 square feet per day. Hotels generated about 7 trips per room per day.

Table 40 shows the trip generation rates for the peak season sites. They are, as would be expected, generally higher than for the primary survey. This is both because of the times of year and because these sites were selected because they were expected to experience higher trip rates. (See Chapter III and Appendix A for discussion of how the Peak Season sites were selected and the Peak Season survey was carried out.) The rates shown on Table 40 are not directly comparable to those shown on Table 36 through 39, except for the large retail category. A direct comparison can be made between the primary survey and the peak season survey in that category because the same sites were surveyed both times. During the primary survey, large retail citywide generated about 130 trips per 1,000 square feet per day. During the peak season, these sites generated 48% more trips, or 190 trips per 1,000 square feet per day.

TABLE 36 - AVERAGE NUMBER OF TRIPS PER 1,000 SQUARE FEET, SUPERDISTRICT 1

	Retail	Large Retail	Super-market	Rest-aurant	Cultural	Institu-tional	Office	Hotel (per room)
Average peak hour* trips	48	9	70	98	29	10	2	0.66
Average daily trips	466	95	893	970	304	103	18	6.92

* Peak hour of the site, not peak hour of the transportation system.

Source: MetroDynamics, Department of City Planning

TABLE 37 - AVERAGE NUMBER OF TRIPS PER 1,000 SQUARE FEET, SUPERDISTRICTS 2, 3, 4

	Retail	Large Retail	Super-market	Rest-aurant	Cultural	Institu-tional	Hotel (trips per room)
Average peak hour* trips (weighted)	25	15	23	45	24	9	0.82
Average daily trips (weighted)	248	168	297	447	259	98	8.25

* Peak hour of the site, not peak hour of the transportation system.

Source: MetroDynamics, Department of City Planning

TABLE 38 - AVERAGE NUMBER OF TRIPS PER 1,000 SQUARE FEET, ALL OF SAN FRANCISCO

	Retail	Large Retail	Super-market	Rest-aurant	Cultural	Institu-tional	Hotel (trips per room)
Average Peak Hour* Trips (weighted)	37	12	28	73	27	10	0.70
Average daily trips (weighted)	360	127	360	726	281	98	7.30

* Peak hour of the site, not peak hour of the transportation system.

Source: MetroDynamics, Department of City Planning

TABLE 39 - DAILY TRIP GENERATION RATES – EMPLOYEES & VISITORS

	Superdistrict 1		Rest of San Francisco		All of San Francisco	
	Empl	Vis	Empl	Vis	Empl	Vis
Retail (per 1,000 s.f)	5.6	460	6.2	242	5.8	354
Office (per 1,000 s.f.)	9	9	Only Offices in Superdistrict 1 were included in the visitor survey			

Retail includes all sizes and types of retail surveyed, including restaurant.

TABLE 40 - PEAK SEASON DAILY TRIP GENERATION RATES

LAND USE[1]	TRIP GENERATION RATE
Hotel (per room)	8.74
All Retail (per 1,000 s.f.)	581
Restaurant (per 1,000 s.f.)	1,336
Cultural (per 1,000 s.f.)	121
Large Retail (per 1,000 s.f.)[2]	192

[1] The sites surveyed in the Peak Seasons were not randomly selected. Instead sites were chosen which were expected to have high rates due to tourist visits and/or holiday shopping. The Peak Season Cultural sites include a greater proportion of large public museums with very large floor areas, resulting in a very low per square foot rate. Consequently the Hotel, Retail, Restaurant and Cultural Peak Season rates are not directly comparable to the Primary Study rates. It is reasonable to expect that the Peak Season rates shown in this table are higher than would be found if all the sites in the Primary Study rates were re-surveyed during a Peak Season.

[2] The Large Retail sites shown on this line are also included in the Retail line. They are separated out here because they are the same sites included in the Large Retail category in the Primary Study. This category is comparable to the trip rates for Large Retail shown in Tables 36 through 38.

ACKNOWLEDGEMENTS

Report prepared by the San Francisco Department of City Planning,
OASIS (Office of Analysis and Information Systems)

Lucian Blazej, Director of Planning
Amit K. Ghosh, Chief of Comprehensive Planning
Rebecca Kohlstrand, Chief Planner
William C. Wycko, Manager of Transportation Section

Project Team: Miriam Chion, Catherine Bauman, Lilia Medina

With Assistance From: Rana Ahmadi, Peter Albert, Christian Berges, Alton Chinn, Scott Dowdee, Dave Feltham, Meg Hennington, Janice King, David Levy, Nat Lewis, Julia Lienemeyer, Lulu Mabelitini-Hwang, Pamelia Maxwell, Barry Polley, Jon Purvis, Charles Rivasplata

Consultants: Diane Nygaard, Nelson\Nygaard Associates, with Harold Charns and Kiyomura-Ishimoto Associates
Gary Edson, Ph.D., Metro Dynamics, Inc.

San Francisco Public Utilities Commission: Fred Howell
San Francisco County Transportation Authority: Carmen Clark

APPENDIX A, METHODOLOGY

TABLE OF CONTENTS

I. SCOPE OF THE STUDY A-1

II. DATA SOURCES AND SELECTION OF SURVEY SITES A-4

III. SURVEY ADMINISTRATION A-6

IV. STATISTICAL METHODOLOGY A-10

V. ANALYSIS FORMATS A-15

APPENDIX A, METHODOLOGY

I. Scope of the Study

A. Survey Seasons

The study *primary survey* for the study was performed during a period of regular visitation (September through November 1992) to observe typical travel behavior and rate of visitor trips. This survey included about 400 sites citywide. The *peak season survey* compiled additional information from about 40 sites during seasons with a high volume of visitor travel. This survey was conducted over the Labor Day weekend and the Holiday shopping season of 1992.

B. Geography

The study divides San Francisco into four areas, called "Superdistricts." These areas are defined by the Metropolitan Transportation Commission. They are shown on Figure 1 of this report (page 4). This subdivision provides us with detailed results and allows us to compare and contrast the different visitation patterns in different part of the City. Superdistrict 1, in the northeast, is roughly bounded by Van Ness Avenue on the west, Townsend Street on the south, and San Francisco Bay. It includes downtown San Francisco and the surrounding high density residential and commercial neighborhoods. Superdistrict 2 is the area to the west of Superdistrict 1, reaching to the Pacific Ocean and as far south as the southern boundary of Golden Gate Park. It includes neighborhoods from Pacific Heights and the Western Addition to the Richmond District. Superdistrict 3 is the southeast section of the City, extending from Twin Peaks to San Francisco Bay and the San Mateo County line. Superdistrict 4 is the southwest section of the City ranging from Twin Peaks to the Pacific Ocean and the San Mateo County line. The region outside of San Francisco is divided into subregions: North Bay (Marin and Sonoma counties), East Bay (Contra Costa, Alameda, Solano and Napa counties) and South Bay (San Mateo and Santa Clara counties).

C. Land Uses

The study uses land use classifications which are defined by the Department of City Planning and used in its economic reports and studies. The categories used here are those which are believed to generate substantial numbers of visitor trips: *Retail, Hotel, Cultural, Institutional* and *Office*. For the purposes of this study, *Retail* sites have been divided into several categories which were expected to exhibit considerable variability in trip rates and travel patterns, information about which will be useful for impact assessment purposes. These subcategories are *Large Retail* (retail sites over 50,000 square feet), *Restaurant*, and *Supermarket*; the remaining retail establishments remain in the *Retail* category. *Cultural* includes museums, art galleries, theaters (including cinemas), and performance spaces. Some of these are commercial in nature. *Institutional* includes health, educational and social services.

Retail, Hotel, Cultural, and *Institutional* sites were surveyed citywide. *Offices* were only surveyed in Superdistrict 1, and within the Transit Impact Development Fee (TIDF) area, were surveyed. Generally, most trips to offices are made by workers rather than visitors. However, the number of visitors to office buildings subject to the TIDF may be used in the review of the TIDF program. Offices outside of Superdistrict 1 and Industrial sites were not surveyed because most of the trips to and from these sites are employee trips.

D. Survey Schedule

Surveys were carried out during the hours believed to have the highest visitation, based on Institute of Traffic Engineers (ITE) studies, on long-term observations of several of the sites in this study, on the hours of operation of the establishment, and on information provided by the operators. The schedule of peak periods by land use are shown in Table A1. The typical two-hour observation period for each site was within the peak time established for its land use.

Due to the diversity of establishments and schedules within the Cultural category, the survey times for these sites cover a wide range of hours. Adjustments were made for specific sites, depending on their hours of operation and schedule of events. The schedule was limited by the survey consultant's hours of operation from 7am to 10pm from Monday to Saturday.

TABLE A1 - SCHEDULE OF PEAK PERIODS

LAND USE	WEEKDAY SCHEDULE	SATURDAY SCHEDULE	COMMENTS
CULTURAL	11AM - 9PM	12PM - 3PM 6PM - 10PM	Schedule adjusted by site. 30% of sites surveyed on Saturday
INSTITUTIONAL	10AM - 2PM 4PM - 6PM		Schedule adjusted by site
HOTEL	11AM - 2PM 5PM - 8PM	11AM - 2PM 5PM - 8PM	
RESTAURANT	12PM - 2PM 5PM - 9PM	12PM - 2PM 5PM - 9PM	
RETAIL SUPERDISTRICT 1	12PM - 2PM 4PM - 6PM	12PM - 2PM 4PM - 6PM	30% of sites surveyed on Saturday
RETAIL SUPER-DISTRICTS 2,3,4	10AM - 6PM	10AM - 6PM	30% of sites surveyed on Saturday
SUPERMARKET	10AM - 2PM 4PM - 8PM	10AM - 2PM 4PM - 8PM	

Source: MetroDynamics, Nelson\Wygaard, Department of City Planning

Long-term Observation of Sites

At the beginning of the surveying process, 19 of the sample sites (three to five in each land use category) were surveyed over the course of an entire business day. The results were used, in conjunction with the Institute of Traffic Engineers (ITE) national surveys, to determine the peak periods during which the surveys should be conducted and to establish the relationships between the number of peak hour trips and the number of daily trips. Long term observations allowed the ITE results to be adopted to local circumstances, and were particularly useful in establishing the peak periods and the daily trip ratio for Cultural sites (which are not provided by ITE). These observations also helped to develop estimates of how many interviews could reasonably be expected in any given amount of time.

The Long-term surveys were conducted in September 1992. The sites chosen were considered to be fairly typical of each land use.

E. Relationship to *Citywide Travel Behavior Survey - Employees and Employers*

This study involved surveying non-employees. It focused on land uses which have high volumes of trips by non-employees. The earlier phase of this project, *Citywide Travel Behavior Survey - Employees and Employers*, completed in May 1993, investigated work-related travel by surveying San Francisco employers and their employees about factors that influence work travel. The selection of establishments in the first phase was categorized by Superdistrict and Establishment size, rather than land use. Information from both phases was used to determine the Daily Trip Rates presented in Section V of this report.

II. Data Sources and Selection of Survey Sites

A. Primary Survey

The initial data source was the list of establishments developed for *Citywide Travel Behavior Survey - Employees and Employers*, classified by land use. Additional establishments were added as needed from various data sources for each land use classification which represented a sampling frame of establishments.

Data for *Hotel, Small Retail,* and *Supermarkets* were collected from the San Francisco Controller's Office main data base which includes all establishments within the city as recorded by April 1992.

The list of *Restaurants* was derived from data provided by the Tax Collector's office. These data covered all establishments that had an active license for food preparation and service as of September 1992, including markets and stores that had a delicatessen section. Since this sampling frame was to include only restaurants, all other establishments appearing on the list were excluded from the sample if selected.

Cultural establishments were drawn from a newspaper section covering cultural and entertainment events for the first week of September. This land use classification comprised museums, theaters, nightclubs, galleries, etc.

Institutional establishments were drawn from the database of employers used in *Citywide Travel Behavior Survey - Employees and Employers*, supplemented with a database compiled by the Department of City Planning for the 1990 census. This category includes health, educational, and social service organizations. Primary and high schools were excluded from the sample because of difficulties interviewing children.

The list of *Office* sites was drawn from a list of 200 buildings that are subject to the Transit Impact Development Fee (TIDF), supplied by the Office of the Assessor and the San Francisco Public Utilities Commission. (See Office Sample, page A-13)

The selection of sites for the *Primary Survey* was based on eight sampling frames, one for each land use category. Each sampling frame was subdivided into four Superdistricts or sampling units within San Francisco. (The exception was Office, which was only surveyed in Superdistrict 1.) The sample provided about 15 to 20 sites per sampling unit (each Superdistrict per land use) to count the number of visitors and interview around 300

visitors. (See *Confidence Intervals*, below, for more detail about the statistical reasoning leading to these numbers.)

Before the samples for each sampling frame were drawn, a list of establishments for each land use category was sorted by zip codes in order to have a proportional distribution of sites by geography. Then, the total number of establishments per sampling unit (each Superdistrict per land use) was divided by the number of establishments required and the result was used as the interval to select sites, starting at a random point. An additional 30% of sites were selected as potential replacements for selected sites which might prove to be impossible or inappropriate to survey. These replacement sites were moved into the Primary Sample only if needed.

The samples for each land use were stratified and drawn by Superdistrict. When the results were aggregated at the city level, weights were applied to each sampling unit in order to represent its proportion of establishments and trips within the city.

B. Peak Season Sites

The 1992 Peak Season surveys (those conducted over Labor Day weekend and the holiday shopping season) used the same survey instrument and the same survey protocols as the primary visitor survey. The results of these surveys were combined and are presented as "Peak Season" travel behavior. Considered in conjunction with the primary visitor survey, the Peak Season data can increase our understanding of this aspect of visitor travel behavior.

The Labor Day sites were chosen based on the judgement of Department of City Planning staff. The goal of the Labor Day survey was to learn more about the travel behavior of those visiting from outside of San Francisco, as well as that of all visitors during a peak tourist time of year. Surveys were conducted between September 3 and September 12, 1992, during the times of day when heavier than average trip volumes were expected. Twenty-seven sites were selected which were believed to be attractive to out-of-town visitors. Twelve hotels, two retail stores, eight restaurants, two large complexes with a mix of retail shops and restaurants, and three museums were surveyed. All of the Labor Day sites except for one hotel on Lombard Street, a hotel and a restaurant on upper Market, and two museums in Golden Gate Park, are in Superdistrict 1. Six sites are in Fisherman's Wharf, six in the Downtown, and six in Chinatown; two are in North Beach. They are not representative of all San Francisco hotels, small retail establishments, restaurants or cultural institutions, and they do not reflect the distribution of establishments between these land uses.

Those surveyed between Thanksgiving and Christmas included all of the Large Retail sites included in the Primary Survey (which included all of the Large Retail establishments in San Francisco that were practical to survey). These are the kinds of establishments expected to experience higher levels of visitation from Christmas shoppers. Three sites were in Superdistrict 1, one each in Superdistricts 2 and 3, and two in Superdistrict 4.

C. Other Data Sources Incorporated into the Study

In addition to the 1992 sites, data from a survey of two Large Retail establishments in Superdistrict 1 (San Francisco Centre and Neiman-Marcus), conducted in 1991, were incorporated into the study.[1] That survey used similar protocols and asked similar questions about modes of travel used.

Several sites within the University of California at San Francisco were part of the sample drawn. The University had conducted a travel survey in February 1992 which gathered much of the same information about visitor trips, and which was made available by UCSF for this study.[2] Data from the UCSF survey have been incorporated into this study.

III. Survey Administration

A. Survey Instrument and Implementation

The questions included in the survey were designed to determine where and when the current trip began and ended, what transportation mode or modes were used, and whether the trip was linked to other activities (such as work). Geographic responses were asked and coded by Zip Code, which have been combined into Superdistricts and subregions for this analysis. The information gathered in these interviews results in statistics about linked trips and transportation modes used, by land use and Superdistrict. A copy of the survey instrument is included as Figure A1, page A-8.

Surveys were administered by a consultant, Nelson\Nygaard, using surveyors and counters. Surveyors intercepted individuals randomly. If the person was a visitor (a visitor is anyone who is not an employee), the surveyor asked a series of questions which centered on the person's current trip (the trip ending or beginning at the site). Counters counted all who entered or left the site during each 15 minute period for a two-hour period. These counts form the basis for calculating Daily Trip Generation Rates for the land uses studied.

B. Review and Inspection of Sites

The establishments that were selected to be part of the sample all received letters, signed by the Mayor, informing them of the study, and urging their cooperation.

The selected establishments were inspected by staff of the Department of City Planning and its consultant, Nelson\Nygaard Associates. These inspections were used to establish the number and location of surveyors and counters required for each site. Most establishments could be surveyed from the public right-of-way. Some establishments could only be surveyed or counted by stationing personnel within the establishments or on private

---

[1] Travel Behavior Survey, Korve Engineering, 1991

[2] Wilbur Smith Associates, *Long Range Development Plan, Journey to Campus Data Analysis,* August 1992.

property. Staff contacted the owners or operators of those sites to obtain permission to use the premises. In most cases permission was granted. Sites were eliminated only if permission required to carry out the survey was not granted.

As a result of the inspections, some other sites were dropped from the study. Some establishments had moved or gone out of business. There were also some practical reasons for eliminating sites such as many entrances or several parking levels that would have required too many surveyors and counters to cover. Sites with business hours only on Sunday or after 10 pm were eliminated. Some sites were discarded because they were not actually engaged in the land use activity for which they had been chosen. For example, some interior decorators were in the Retail database because they have Resale Licenses. However, they do not operate retail establishments open to the public, so they do not fit the definition of Retail used for this study.

Sites with a very low volume of visitors (less than 20 per day) were not surveyed. Instead, these sites were included in the statistical analysis with an estimate of daily visitors.

Figure A - Copy of Survey Instrument

SF DEPARTMENT OF CITY PLANNING CTBS-VISITOR MODE SPLIT QUESTIONNAIRE Page___of____

Survey Date_____; Time Period of Survey (a.m./p.m.)_____; Name of Surveyor_____

Survey Site Code_____; Name of Facility Surveyed_____; Facility Entrance_____

Do you work here? (If no, continue interview.) (If yes, mark tally here only.)

How did you travel to area? (for MUNI only, include combinations such as # of transfers on MUNI, BART & MUNI, Caltrain & MUNI, etc.)		If you arrived by auto, how many people arrived with you?	Where do you live? (within SF, inside or outside region)	Where did you travel from before you came here? (from home, work, etc. & where is that)		What time did you arrive here?	What time will you leave here?	How will you travel when you leave this area? (for MUNI, include combinations such as # of transfers on MUNI, BART & MUNI, etc.)	
AUTO	OTHER (if M, + # transfers)			Trip Type	Trip Origin			AUTO	OTHER (if M, + # transfers)

A =Auto Driver
P =Auto Passenger
T =Taxi
L =Limo
	M =MUNI & # MUNI transfer
	B =BART
	C =Caltrain
	G =Golden Gate Bus
	S =Samtrans
	AC=AC Transit
	F =Ferry
	T =Tour Bus
	W =Walk
	BC=Bicycle
	MC=Motorcycle
	Ot=Other
		Only for those arriving by auto - include driver & self in count.	Zip Code of home addre. or SF Supdist or for other: NB=N. Bay EB=E. Bay SB=S. Bay OA= Other	H =Home
				W =Work
				Ht=Hotel
				S =School
				Sh=Shopping
				R=Recreation
				Ot=Other
					Zip Code where this trip originated or by SF Superdist. (see map) or for others: NB= N. Bay EB =E. Bay SB =S. Bay OR=Outside Bay Area	To the nearest quarter hour - in hours & minutes	To the nearest quarter hour - in hours & minutes	A =Auto Driver
								P =Auto Passenger
								T =Taxi
								L =Limo
									M =MUNI & # MUNI transfer
									B =BART
									C =Caltrain
									G =Golden Gate Bus
									S =Samtrans
									AC=AC Transit
									F =Ferry
									T =Tour Bus
									W =Walk
									BC=Bicycle
									MC=Motorcycle
									Ot=Other

C. Small establishments within a larger complex of the same Land Use

In general, one establishment with one specific land use was the target unit for observation. However, a somewhat different approach was taken where the selected establishment is one of many establishments within a larger building which contains only one land use. In these situations, usually offices, art galleries and other cultural sites, or doctors' offices, the entire building was surveyed. The share of the entire building's visitors attributable to the individual site that had been randomly selected (based on the site's share of the total square footage) was used in the study. This approach facilitated control over one single entrance (usually an entrance on a public right-of-way) and allowed a large enough volume (more than 20 visitors per day) to make administration of the survey at the site worthwhile.

D. Special Issues with Hotels

Two problems arose with hotels. Many of the establishments in the hotel data bases were residential hotels, buildings which are the primary residence of those staying there. This was especially true in Superdistrict 3. The trips of people coming and going from their residences are not within the scope of this study. Establishments registered with the City as residential hotels, which have less that 50% of their rooms available to tourists, and hotels whose owners identified them as residential hotels were dropped from the sample.

Many of the hotels in San Francisco outside of downtown, and many of those in the sample outside of Superdistrict 1, are motels; their rooms open directly onto an interior parking area. Most guests drive onto the site and walk directly to their room without going through a public lobby. Motel operators are reluctant to allow surveyors to intercept guests at the door to their room, and it was expected that guests would be reluctant to answer questions in that situation. For motels, a modified form of the survey was conducted. In these situations, surveyors counted the number of vehicles, the number of passengers, and pedestrians entering the establishment. Conclusions were drawn about trip rates, auto occupancy and this limited number of modes, from these counts.

IV. Statistical Methodology

A. Design of Primary Sample for Visitor Interviews

The purpose of the interview portion of the study was to gather information about transportation modes used by visitors based on their land use destination within the four Superdistricts in San Francisco. The information was collected through visitor interviews at a selection of establishments. The survey was designed based on a *cluster sampling technique* which consisted of an initial sampling of establishments or *clusters*, followed by the selection of visitors or *elements* to be interviewed within each *cluster*. The number of visitors to be interviewed was determined based on the assumption that 20 percent of visitors drive alone and 80 percent use alternative modes.

In order to achieve a plus or minus 2.3 percent error margin, at a 95 percent confidence level with assumed binomial distribution of 20 and 80 percent, a sample size of 1200 visitor interviews city-wide per land use was required. If the modal split was 50/50 split, then the error margin would be 2.9 percent for the same number of interviews. (See Table A2.)

In addition to the citywide responses by land use, the sample was designed to allow statements about Superdistrict 1 vs non-Downtown San Francisco (Superdistrict 2, 3, and 4). There were specific needs to identify visitor trip rates and transportation modes for downtown visitors. There was also an expectation that visitors travelling to or from downtown have travel patterns distinct from those of travelers to or from Superdistricts 2, 3, and 4.

TABLE A2 - SAMPLE SIZE AND ESTIMATED ERROR MARGINS AT 95% PROBABILITY

	SD 1	SD 2	SD 3	SDs 2, 3, 4	Citywide
Interviews required for each Land Use	400	300	300	800	1200
Margin of Error at 20/80%	±4.0%	±4.6%	±4.6%	±2.8%	±2.3%
Margin of Error at 50/50%	±5.0%	±5.8%	±5.8%	±3.5%	±2.9%

Source: MetroDynamics, Department of City Planning

At the Superdistrict 1 level, assuming a mode split of 20/80 (drive alone to other mode) and a 4 percent error margin, the required sample size was 400 interviews per land use. If the mode split is in the range of 50/50, then the error margin would be 5 percent for the same number of interviews. Compiling results from Superdistrict 2, 3 and 4, and assuming a 20/80 mode split associated with a 2.8 percent error margin, the needed sample size was 800 interviews. If the worse case scenario of 50/50 split was assumed, then the margin of error would increase to 3.5 percent. The sample would even allow results by Superdistrict 2 and 3. The required sample for a 80/20 split mode and a 4.6 error margin be 300 interviews per Superdistrict.

Based on previous surveys performed by the survey consultant, Nelson\Nygaard, it was assumed that in downtown or Superdistrict 1 an average of ten visitors would be interviewed per hour per site. Considering 2 hours of survey per establishment and 10 interviews per hour, 20 establishments per land use in Superdistrict 1 would result in about 400 interviews.

Superdistrict 2 and 3 sites were expected to result in a lower average number of interviews per hour. It was estimated that around 20 establishments per land use would be needed to reach 300 interviews, the minimum number needed to make representative statements at the Superdistrict level. Superdistrict 4 was assigned 10 sites per land use because it contained a smaller number of establishments than any other Superdistrict, in some uses less than 10. The number of interviews collected in this Superdistrict would have a margin of error of more than 5 percent, if analyzed by itself.

Citywide there were about 70 sites or *clusters* selected per land use, with the exception of Large Retail and Supermarket. The possible number of interviews at Large Retail and Supermarket establishments was limited by the small numbers of sites within those categories. There were fewer than 20 sites for each of these Uses citywide that could feasibly be surveyed. These sites had a large volume of visitors, which resulted in more than 10 visitor interviews per hour but the citywide total was less than the required 1200 for these land uses.

B. Design of Primary Sample for Trip Counts

The objective of the collection of trip counts was to determine the number of trips generated by each land use both during the peak hour and during the whole day.

Observations were made of the number of trips occurring during the peak period (two or more hours) for each land use. The peak period for this study was not necessarily the same as the peak commuter traffic period, but the peak of trips to and from the establishments that make up that land use. The peak hour within this peak period was the four consecutive 15-minute intervals with the most trips. This peak hour was then used in conjunction with factors from the *ITE Trip Generation Manual (5th Edition)* and information gained from the long-term observations to estimate the number of trips occurring during the entire day. That manual lists the percent of the daily trips that have been observed during the peak hours through studies of each land use type. The ratios used in this study are shown in Table A3. Because the Cultural land use type is not one reported on by the ITE, a similar method was used substituting information from long-term observations made during this study, rather than the ITE data.

TABLE A3 - PEAK HOUR TO DAILY TRIP RATE RELATIONSHIPS

Observation Period	SD 1 Retail	SD 2, 3, 4 Retail	Rest-aurant	Super-market	Hotel	Institu-tion	Office
Weekday PM Peak Hour	9.2%	NA	7.9%	7.3%	8.7%	7.9%	13.3%
Weekday Peak of Generator	10.2%	9.0 - 10.7%	10.1%	7.8%	8.7%	9.2%	---
Saturday Peak of Generator	9.9%	9.1 - 10.7%	11.9%	8.6%	8.3%	8.9%	---

Source: ITE, Trip Generation, 5th Edition; *Department of City Planning.*

Table A4 shows the number of 15 minute segments observed for each land use and Superdistrict. Table A5 shows the number of one-hour observations included in the trip rate analysis.

Because the sites had been sampled using a stratification technique (as described in Section A-II), it was necessary to reweight the data based on the actual number of establishments in each Superdistrict before aggregating the results to determine Citywide trip rates.

TABLE A4 - NUMBER OF 15 MINUTE TRIP COUNT OBSERVATIONS, BY LAND USE AND SUPERDISTRICT

	Retail	Large Retail*	Super-market*	Rest-aurant	Hotel	Cultural	Institu-tional	Office
SD 1	230	20	4	220	220	242	572	60
SD 2	84	4	16	76	57	90	384	not counted
SD 3	88	4	32	84	18	133	231	not counted
SD 4	45	8	20	33	14	28*	156	not counted
Totals	447	36	72	413	309	469	1343	60

* Only hour long data were collected for these land uses, so these figures represent hour-long observations.

TABLE A5 - NUMBER OF SITES OBSERVED, BY LAND USE AND SUPERDISTRICT

	Retail	Large Retail	Super-market	Restaurant	Hotel	Cultural	Institu-tional	Office
SD 1	23	5	2	22	20	22	22	15
SD 2	28	1	4	19	19	17	24	not counted
SD 3	22	1	8	21	9	19	21	not counted
SD 4	15	2	5	11	7	7*	12	not counted
Citywide	88	9	19	73	55	65	79	15

Source: MetroDynamics, Department of City Planning

C. Design of Office Sample

The City and County of San Francisco charges downtown office developers a fee, the Transit Impact Development Fee (TIDF), which is used to fund transit improvements. *Citywide Travel Behavior Survey - Employees and Employers*, collected data about employee travel behavior. This visitor survey included administering the visitor survey during December 1992 at Superdistrict 1 office buildings which are subject to the TIDF. It targeted both visitors, and to a lesser extent, employees. This information may be used in the PUC/MUNI's annual TIDF reports, and to guide the transit improvements that it funds.

The Office sample was drawn to gather information on mode split and trip density. The confidence level for the Office Survey was established at 95 percent and it was assumed that the mode split between drive alone and other transportation mode alternatives were approximately 20 to 80[3]. The confidence level and mode split associated with a 3.3 percent error margin required a sample size of 600 visitor interviews. If the mode split was about 50/50, the error margin would be 4.1 percent for the same sample size.

Based on these considerations, budget constraints, and the assumption of 10 visitor interviews per hour[4], there were 15 Office buildings selected with four hours of observations per site.

The sample of Office establishments was also drawn using a *cluster sampling technique* with a *probability proportionate to size* sampling method. This method consisted of selecting a representative sample of the entire square footage of all 200 buildings subject to the TIDF. All buildings were sorted by square footage size and then a sampling interval was used to select the required 15 sites. This technique required square footage

[3] Based on *Transportation Management Association Report*, 1992.

[4] Nelson/Nygaard, 1992

information for all 200 buildings which was gathered from the Assessor's data, the *Downtown Plan Monitoring Report*[5], Metroscan, and the TIDF data.

In addition to the visitor interviews, the Office survey included interviews with employees to optimize the use of resources and provide specific data about MUNI rides and transfers. The employee questionnaire was similar to the visitor questionnaire with some minor adjustments. The two questionnaires were used as appropriate at each site, with the visitors survey having priority over the employee interviews. The employees interviews were performed only after a minimum of 10 visitors interviews were completed in any hour.

[5]San Francisco Department of City Planning, *Downtown Plan Growth Monitoring Report*, 1991

V. Analysis Formats

A. Trip Linkages

The first tables presented for each Superdistrict describe the "Linkages" between the land uses. This concept recognizes that many trips, especially visitor trips, have more than one destination. Shoppers stop at more than one store; tourists at more than one attraction. These tables show what proportion of the visitors to different land uses arrived directly from home, from work, from school, from shopping, etc.

B. Modes Used

Visitors were asked how they traveled to the site, and how they would be traveling away from the site. In many cases, people used more than one mode, for example both BART and MUNI. The results in each cell represent the number of people who use that mode at some point in their trips, divided by the total number of trips to arrive at a percentage. As a result, these columns will add to more than 100%. They answer the question: *What percentage of all trips used any given mode at any point during the trip?*

C. Auto Occupancy

Visitors who drove to a site were asked how many people were in the car. These answers were used to determine the average auto occupancy by land use and Superdistrict.

D. Trip Rates

First the total number of trips to each site during its peak hour of usage was determined, on a square footage basis (or per room for hotels). Daily trip generation rates were calculated based on the relationships between peak hour trips and daily trips presented in the ITE trip generation manual and on those observed during the Long-term observations. (See *Long-term sites*, above). These relationships are shown in Table A3.

The study included, in addition to the visitor interviews, a count of total trips per site to determine the trip density per land use. The trip density was defined as the average number of trips per one thousand square feet at the peak hour of each site. This definition was applied to all land uses besides hotel. The trip density for Hotels was defined as the number of trips per room.

The sites selected were the same for visitor interviews and trip counts, both performed at the same time. While for visitor interviews each site represented a *cluster* from which to draw visitor interviews or *elements*, for the trip counts each site represented an *element* of the sample. Each site or *element* provided a peak hour of observation. Because the number of sites selected for trip counts were limited by the number of sites needed for visitor interviews and budget constraints, the results did not provide statistical inferences.

There were about 70 Cultural, Institutional, Hotel, Restaurants and Small Retail establishments selected to be observed for 2 hours from which the hour with the highest number of trips was drawn, providing a total of 70 peak hours of observations. These 70 observations were used to identify average trip counts citywide by land use. The sample was not designed to allow trip count summaries by Superdistrict.

The optimal distribution of establishments by land use and Superdistrict was defined as follows:

TABLE A6 - ESTABLISHMENTS REQUIRED BY LAND USE AND SUPERDISTRICTS FOR VISITOR INTERVIEWS AND TRIP COUNTS

	Cultural	Institu-tion	Hotel	Rest-aurant	Small Retail	Large Retail	Super-market
SD 1	20	20	20	20	20	All sites	All sites
SD 2	20	20	20	20	20	All sites	All sites
SD 3	20	20	20	20	20	All sites	All sites
SD 4	10	10	10	10	10	All sites	All sites
TOTAL	70	70	70	70	70	10~	10~

Source: MetroDynamics, Department of City Planning

APPENDIX B. Number of Responses to Visitor Survey Questions

Approximately 10,000 visitors were interviewed about their trips to and from selected sites. The tables presented in this report describe their responses, organized in several different ways. Some of the tables divide the responses into many categories, so that in some cases there are relatively few responses in some cells. This is important because the reliability of the information (in other words, the extent to which we believe it can be used to predict future travel behavior) is less when the number of responses is very low.

The following tables display the number of usable survey responses received for each Table in the body of this report. The numbers correspond to the Table numbers in Chapters 1 through V. For example, Table B6 shows that in *Table 6: Arrival Modes used by place of Residence and Land Use, SD 1 Sites*, there were 780 responses from restaurant visitors who live out of the region, but only seven responses from supermarket visitors who live out of the region. We will have more confidence in Table 6's distribution of modes used by restaurant visitors from out of the region than we will in its distribution of modes used by supermarket visitors who live out of the region.

The number of responses is most important where the total number of responses is broken down into percentages, particularly since the number of responses received for different categories of respondents sometimes varied greatly. Numbers of responses are not provided where the results presented are averages rather than percentage (i.e., for Auto Occupancy Rates and Trip Rates).

TABLE B1 - RESPONSES TO VISITOR TRIP LINKAGES QUESTIONS, SUPERDISTRICT 1

	Retail	Large Retail	Super-market	Restaurant	Hotel	Cultural	Institutional	Office
Responses	940	430	405	1244	1080	1547	1528	490

TABLE B2 - RESPONSES TO VISITOR TRIP LINKAGES QUESTIONS, REST OF SAN FRANCISCO

	Retail	Large Retail	Supermarket	Restaurant	Hotel	Cultural	Institu-tional
Responses*	14960	703	2581	16123	354	9378	12970

* The numbers of responses are weighted to compensate for the distribution of sites by Superdistrict

TABLE B3 - RESPONSES TO VISITOR TRIP LINKAGES QUESTION, CITYWIDE

	Retail	Large Retail	Super-market	Restaurant	Hotel	Cultural	Institu-tional
Responses*	52096	1087	2934	69313	7417	13578	35530

* The numbers of responses are weighted to compensate for the distribution of sites by Superdistrict

TABLE B4 - RESPONSES TO VISITOR TRIP LINKAGES QUESTION, PEAK SEASON

	Retail	Restaurant	Hotel	Cultural
Responses	1323	448	1114	882

TABLE B5 - RESPONSES TO PLACE OF RESIDENCE QUESTIONS BY VISITORS TO SD 1 SITES

	Retail	Large Retail	Super-market	Restaurant	Hotel	Cultural	Institutional	Office
Responses	840	384	352	1174	1008	1386	1406	445

TABLE B6 - RESPONSES TO ARRIVAL MODE QUESTIONS BY PLACE OF RESIDENCE AND LAND USE, SD 1 SITES

	Retail	Large Retail	Super-market	Rest-aurant	Hotel	Cult'l	Instit'l	Office
SD 1 Resident Responses	142	36	208	110	46	170	476	79
SD 2 Resident Responses	84	56	32	62	20	162	222	77
SD 3 Resident Responses	88	40	24	92	45	156	197	73
SD 4 Resident Responses	30	30	12	22	9	86	83	28
E.B. Resident Responses	108	66	28	168	58	195	147	79
N.B. Resident Responses	52	18	17	84	30	107	79	29
S.B. Resident Responses	94	10	25	144	21	91	95	41
Out of Region Responses	246	128	7	500	780	433	111	42

TABLE B7 - RESPONSES TO ARRIVAL MODE QUESTIONS BY TRIP ORIGIN, LINKAGE, LAND USE, SD 1 SITES

Trip Orig.	Linkage	Ret'l	Large Ret'l	Sup-mart	Rest-aurant	Hotel	Cult'l	Inst'l	Office
SD 1	Home	84	68	38	194	30	214	229	48
	Work	172	48	59	94	141	137	229	148
	Not Home or Work	180	34	174	44	204	125	235	31
Out-side SD 1	Home	164	106	42	368	117	583	457	80
	Work	62	40	6	246	96	66	82	106
	Not Home or Work	182	88	34	236	421	275	178	35

TABLE B8 - RESPONSES TO ARRIVAL MODE QUESTIONS BY VISITORS TO SUPERDISTRICT 1 SITES, BY LAND USE

	Retail	Large Retail	Super-market	Rest-aurant	Hotel	Cultural	Institu'l	Office
Responses	844	384	353	1182	1009	1400	1410	445

TABLE B9 - RESPONSES TO DEPARTURE MODE QUESTIONS BY VISITORS TO SUPERDISTRICT 1 SITES, BY LAND USE

	Retail	Large Retail	Super-market	Rest-aurant	Hotel	Cultural	Instit'l	Office
Responses	844	384	353	1182	1009	1400	1410	445

TABLE B10 - RESPONSES TO PLACE OF RESIDENCE QUESTIONS BY VISITORS TO SD 2 SITES

	Retail	Large Retail	Super-market	Restaurant	Cultural	Instit'l
Responses	4160	80	606	1548	3114	4872

TABLE B11 - RESPONSES TO ARRIVAL MODE QUESTIONS BY PLACE OF RESIDENCE AND LAND USE, SD 2 SITES

	Retail	Lg Retail	Supermarket	Restaurant	Cultural	Instit'l
SD 1 Resident Responses	52	36	123	30	90	73
SD 2 Resident Responses	241	52	700	246	152	232
SD 3 Resident Responses	44	26	52	65	101	92
SD 4 Resident Responses	44	34	44	38	46	60
E.B. Resident Responses	20	0	10	33	128	34
S.B. Resident Responses	12	0	20	16	45	18
N.B. Resident Responses	18	12	17	55	52	51
Out of Region Responses	38	0	35	73	203	15

TABLE B12 - RESPONSES TO ARRIVAL MODE QUESTIONS BY TRIP ORIGIN, LINKAGE, LAND USE, SD 2 SITES

Trip Origin	Linkage	Retail	Large Retail	Supermarket	Rest-aurant	Cult'l	Inst'l
SD 2	Home	116	24	426	68	108	120
	Work	48	0	64	106	16	38
	Not Home or Work	128	18	181	137	98	72
Outside SD 2	Home	52	62	133	108	314	135
	Work	37	14	88	79	109	54
	Not Home or Work	120	42	109	154	210	156

TABLE B13 - RESPONSES TO ARRIVAL MODE QUESTIONS BY VISITORS TO ARRIVE AT SITES IN SUPERDISTRICT 2, BY LAND USE

	Retail	Lg Retail	Supermarket	Restaurant	Cultural	Institutional
Responses	499	160	1001	652	855	575

TABLE B14 -- RESPONSES TO DEPARTURE MODE QUESTIONS BY VISITORS TO SUPERDISTRICT 2 SITES, BY LAND USE

	Retail	Lg Retail	Supermarket	Restaurant	Cultural	Institutional
Responses	499	160	1001	652	855	575

TABLE B15 - RESPONSES TO PLACE OF RESIDENCE QUESTIONS BY VISITORS SUPERDISTRICT 3 SITES, BY LAND USE

	Retail	Large Retail	Super-market	Restaurant	Cultural	Institutional
Responses	417	37	742	357	300	261

TABLE B16 - RESPONSES TO ARRIVAL MODE QUESTIONS BY PLACE OF RESIDENCE AND LAND USE, SD 3 SITES

	Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
SD 1 Resident Responses	43	2	87	46	110	38
SD 2 Resident Responses	75	8	89	36	112	36
SD 3 Resident Responses	317	50	781	456	178	316
SD 4 Resident Responses	37	0	52	28	52	8
E.B. Resident Responses	8	6	22	26	72	38
N.B. Resident Responses	7	0	12	20	16	2
S.B. Resident Responses	59	8	98	70	26	82
Out of Region Responses	21	0	36	32	36	8

TABLE B17 - RESPONSES TO ARRIVAL MODE QUESTIONS BY TRIP ORIGIN, LINKAGE, LAND USE, SD 3 SITES

Trip Origin	Linkage	Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
SD 3	Home	251	0	393	172	136	193
	Work	52	0	60	101	22	14
	Not Home or Work	39	48	319	194	44	117
Outside of SD 3	Home	137	0	134	89	358	108
	Work	28	0	43	80	38	21
	Not Home or Work	60	26	228	71	88	75

TABLE B18 -- RESPONSES TO ARRIVAL MODE QUESTIONS BY VISITORS TO SITES IN SUPERDISTRICT 3, BY LAND USE

	Retail	Large Retail	Supermarket	Restaurant	Cultural	Institutional
Responses	565	74	1173	707	686	528

TABLE B19 - RESPONSES TO DEPARTURE MODE QUESTIONS BY VISITORS TO SUPERDISTRICT 3 SITES, BY LAND USE

	Retail	Lg Retail	Supermarket	Restaurant	Cultural	Institutional
Responses	565	74	1173	707	686	528

TABLE B20 - RESPONSES TO PLACE OF RESIDENCE QUESTIONS BY VISITORS TO SUPERDISTRICT 4 SITES

	Retail	Lg Retail	Supermarket	Restaurant	Cultural	Institutional
Responses	212	314	237	235	207	620

TABLE B21 - RESPONSES TO ARRIVAL MODE QUESTIONS BY PLACE OF RESIDENCE AND LAND USE, SD 4 SITES

	Retail	Large Retail	Super-market	Restaurant	Cultural	Institutional
SD 1 Resident Responses	4	11	8	5	22	94
SD 2 Resident Responses	17	52	45	64	44	188
SD 3 Resident Responses	57	90	133	82	90	185
SD 4 Resident Responses	250	152	191	204	103	316
E.B. Resident Responses	6	7	4	18	17	139
N.B. Resident Responses	8	8	0	2	25	50
S.B. Resident Responses	14	101	18	30	31	129
Out of Region Responses	20	48	4	8	44	170

TABLE B22 - RESPONSES TO ARRIVAL MODE QUESTIONS BY TRIP ORIGIN, LINKAGE, LAND USE, SD 4 SITES

Trip Origin	Linkage	Retail	Large Retail	Super-market	Restaurant	Cultural	Institutional
SD 4	Home	108	108	72	100	84	85
	Work	12	2	15	32	4	38
	Not Home or Work	137	55	106	90	29	154
Outside SD 4	Home	34	205	56	83	123	261
	Work	12	0	28	57	19	145
	Not Home or Work	73	99	126	51	117	588

TABLE B23 - RESPONSES TO ARRIVAL MODE QUESTIONS BY VISITORS TO SUPERDISTRICT 4 SITES, BY LAND USE

	Retail	Lg Retail	Supermarket	Restaurant	Cultural	Institutional
Responses	376	469	403	413	376	1271

TABLE B24 - RESPONSES TO DEPARTURE MODE QUESTIONS BY VISITORS TO SUPERDISTRICT 4 SITES, BY LAND USE

	Retail	Lg Retail	Supermarket	Restaurant	Cultural	Institutional
Responses	376	469	403	413	376	1271

TABLE B25 - RESPONSES TO PLACE OF RESIDENCE QUESTIONS BY VISITORS TO SELECTED SITES DURING THE PEAK SEASON

	Retail	Restaurant	Hotel	Cultural
Responses	1397	553	1231	1079

TABLE B26 - RESPONSES TO ARRIVAL MODE QUESTIONS BY PLACE OF RESIDENCE AND LAND USE, SELECTED PEAK SEASON SITES

	Retail	Restaurant	Hotel	Cultural
SD 1 Residents	18	57	46	33
SD 2 Residents	22	28	35	82
SD 3 Residents	18	17	20	34
SD 4 Residents	16	3	16	48
EB Residents	122	29	45	119
NB Residents	30	21	18	50
SB Residents	73	19	21	94
Out of Region	1024	274	913	422

TABLE B27 - RESPONSES TO ARRIVAL MODE QUESTIONS BY TRIP ORIGIN AND LAND USE, SELECTED PEAK SEASON SITES

	Retail	Restaurant	Hotel	Cultural
SD 1 Residents	343	154	269	110
SD 2 Residents	100	38	100	130
SD 3 Residents	183	26	92	114
SD 4 Residents	8	1	12	42
EB Residents	159	23	62	144
NB Residents	66	34	23	52
SB Residents	165	26	197	143
Out of Region	299	146	359	147

TABLE B28 - RESPONSES TO ARRIVAL MODE QUESTIONS BY VISITORS TO SELECTED SITES DURING PEAK SEASON, BY LAND USE

	Retail	Restaurant	Hotel	Cultural
Responses	1323	448	1114	882

TABLE B29 - RESPONSES TO DEPARTURE MODE QUESTIONS BY VISITORS TO SELECTED SITES DURING PEAK SEASON, BY LAND USE

	Retail	Restaurant	Hotel	Cultural
Responses	1323	448	1114	882

TABLE B30 -- PLACE OF RESIDENCE OF VISITORS TO LARGE RETAIL SITES, PEAK & NON-PEAK

Place of Residence	Non-Peak	Christmas Peak
SD 1 Residents	62	87
SD 2 Residents	121	271
SD 3 Residents	146	246
SD 4 Residents	148	295
San Francisco Residents	477	899
East Bay Residents	74	126
North Bay Residents	25	32
South Bay Residents	83	197
Out of Region Residents	156	190

TABLE 31 -- MODES USED BY PLACE OF RESIDENCE AND LAND USE, LARGE RETAIL SITES, PEAK & NON-PEAK

Place of Residence	Non-Peak	Christmas Peak
SD 1 Residents	89	105
SD 2 Residents	188	279
SD 3 Residents	225	262
SD 4 Residents	225	302
East Bay Residents	89	140
North Bay Residents	26	35
South Bay Residents	133	199
Out of Region Residents	180	212

TABLE 32 – MODES USED BY TRIP ORIGIN AND LAND USE, LARGE RETAIL SITES, PEAK & NON-PEAK

Trip Origin	Non-Peak	Christmas Peak
SD 1 Residents	115	250
SD 2 Residents	92	276
SD 3 Residents	129	255
SD 4 Residents	149	334
East Bay Residents	43	104
North Bay Residents	13	24
South Bay Residents	81	192
Out of Region Residents	39	110

TABLE 33 – MODES USED BY VISITORS TO ARRIVE AT LARGE RETAIL SITES, PEAK & NON-PEAK

Mode	Non-Peak	Christmas Peak
Responses	1,155	1,545

TABLE 34 – MODES USED BY VISITORS TO DEPART LARGE RETAIL SITES, PEAK & NON-PEAK

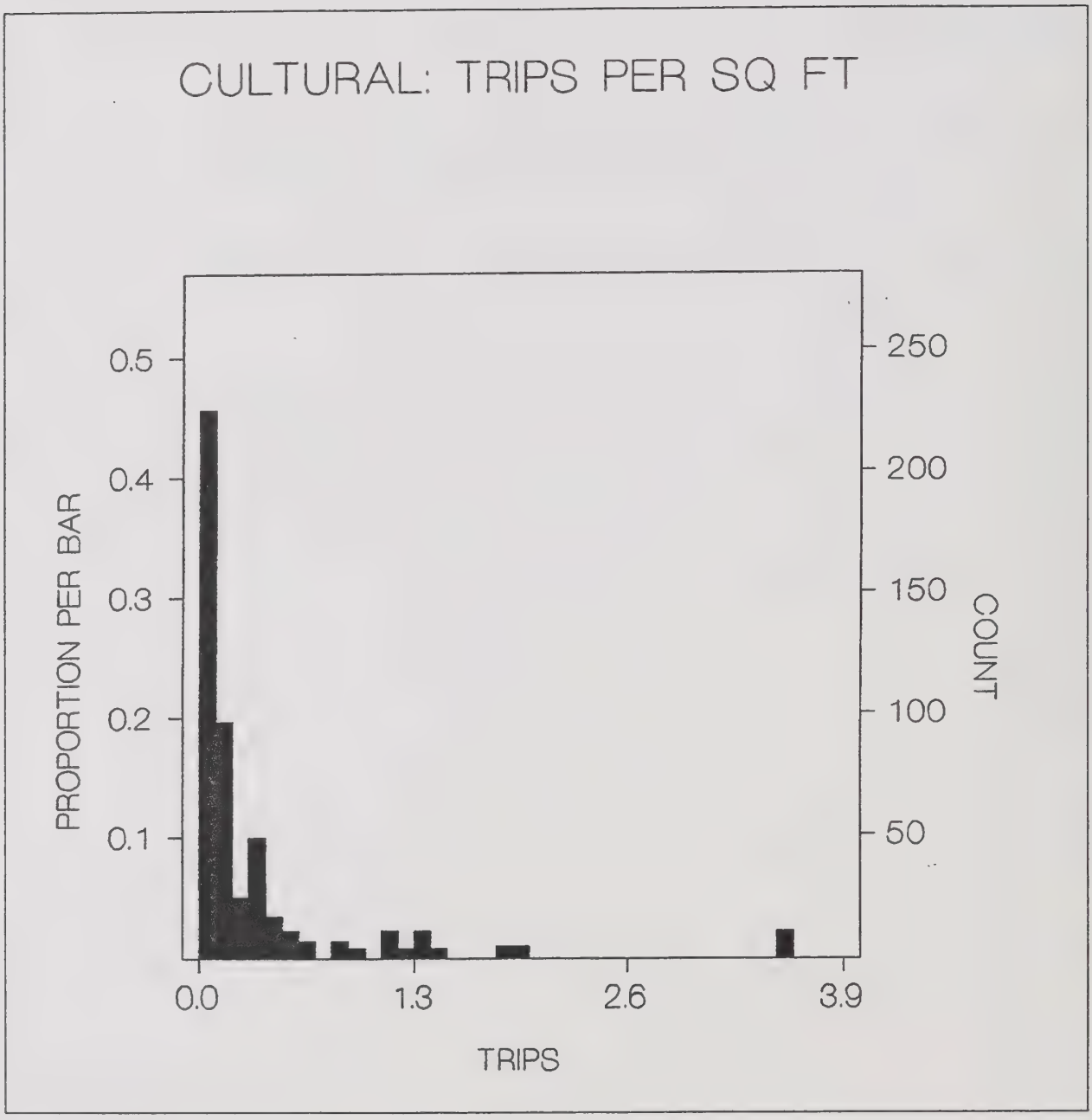
Mode	Non-Peak	Christmas Peak
Responses	1,144	1,529

APPENDIX C

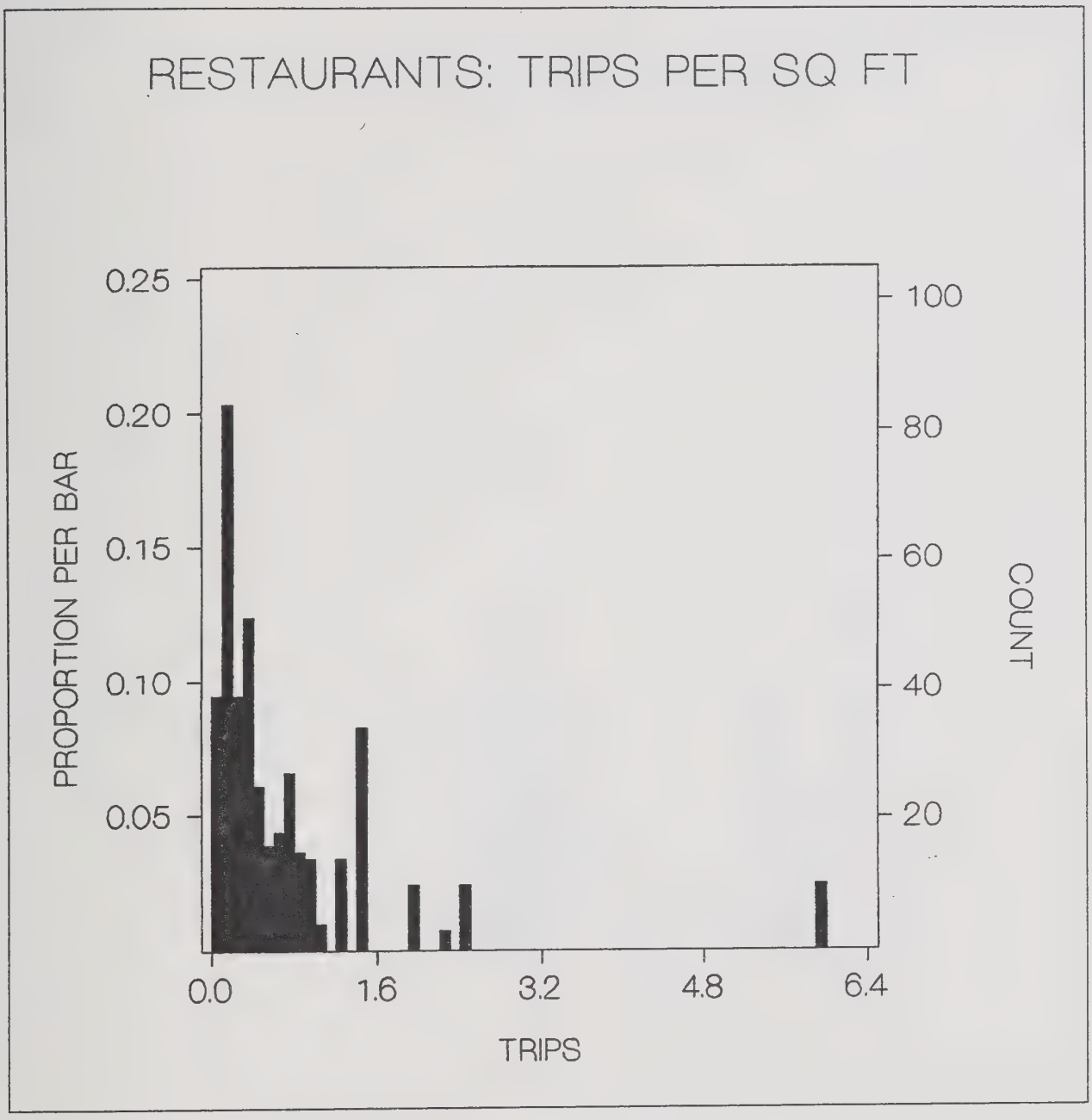
This appendix shows, in a more technical way, the statistical results of the trip count analysis explained in Chapter V. It is included because, for some Land Uses, there was a fairly wide variation in the trip counts.

The bar graphs on pages B-2 through B-9 show the frequency distribution of trips per site by land use. Each graph displays the number of sites reporting each volume of trips, recorded as trips per square foot during the peak hour of the site.

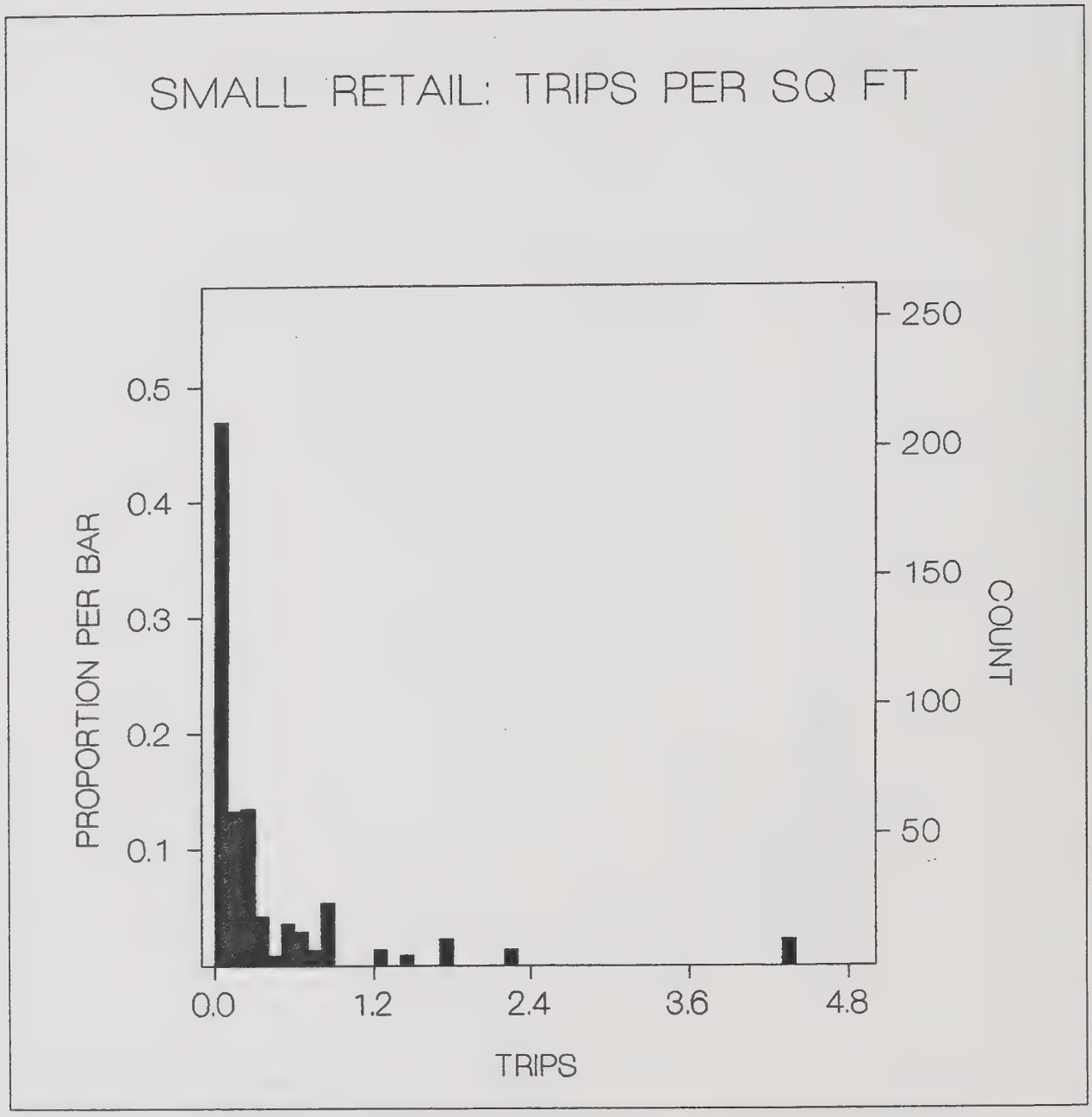
There are also statistical summaries attached to each graph showing the minimum and the maximum number of trips per square foot observed in each Land Use. For example, at Supermarkets, the number of trips counted at the 19 sites ranged from a low of 0.127 trips per square foot in the peak hour, to a high of 1.045 trips per square foot in the peak hour; the mean was .360 trips; the median was .279 trips; the standard deviation was .244. At Restaurants, the number of trips counted at the 413 sites ranged from a low of 0.003 trips per square foot in the peak hour, to a high of 5.984 trips per square foot in the peak hour; the mean was .726 trips; the median was .394 trips; the standard deviation was 1.006.



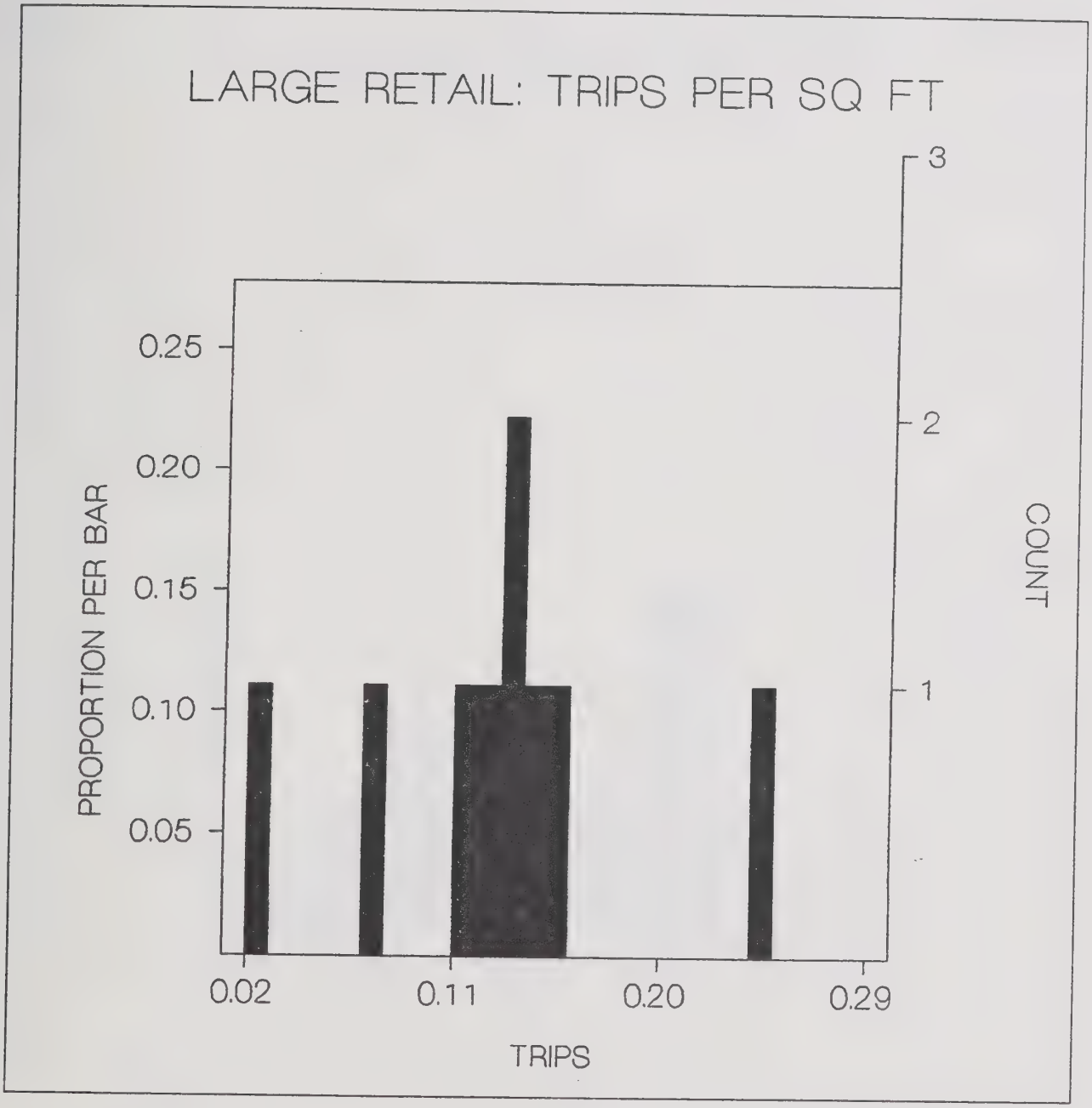
N OF CASES	493
MINIMUM	0.000
MAXIMUM	3.512
RANGE	3.512
MEAN	0.341
VARIANCE	0.387
STANDARD DEV	0.622
STD. ERROR	0.028
C.V.	1.827
MEDIAN	0.123



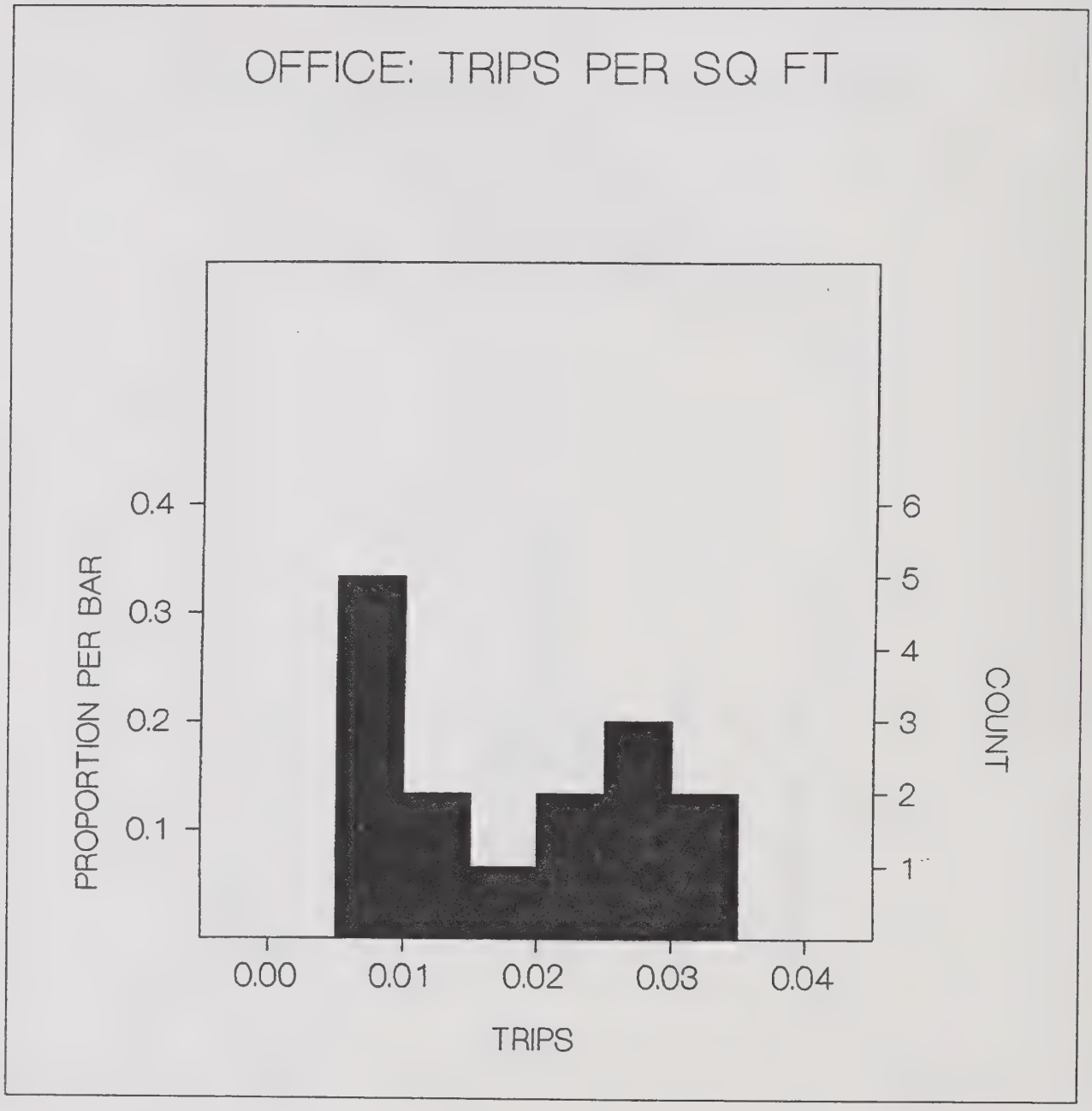
N OF CASES	413
MINIMUM	0.003
MAXIMUM	5.987
RANGE	5.984
MEAN	0.726
VARIANCE	1.012
STANDARD DEV	1.006
STD. ERROR	0.049
C.V.	1.386
MEDIAN	0.394



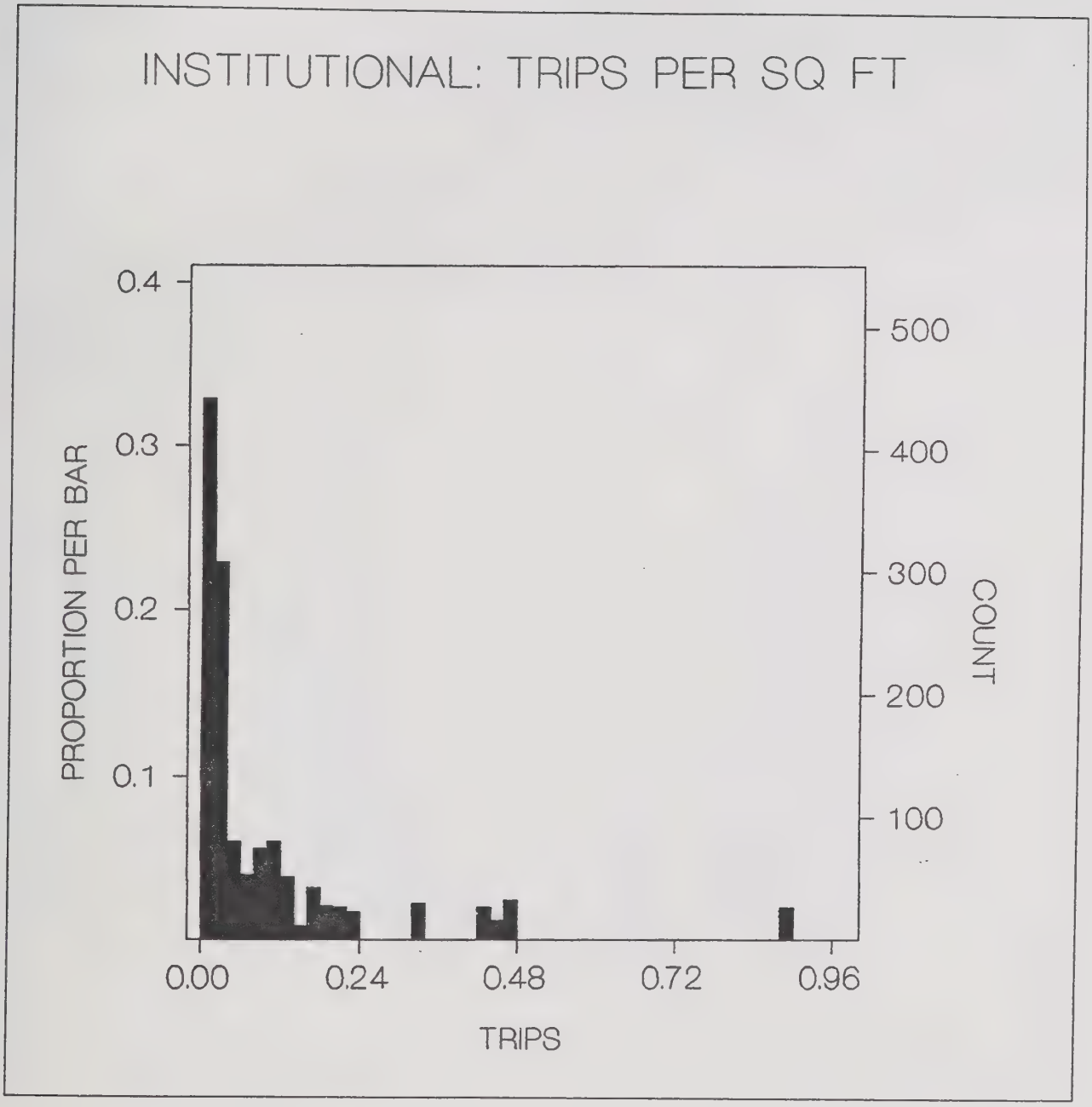
N OF CASES	447
MINIMUM	.600000E-03
MAXIMUM	4.314
RANGE	4.313
MEAN	0.360
VARIANCE	0.509
STANDARD DEV	0.713
STD. ERROR	0.034
C.V.	1.979
MEDIAN	0.136



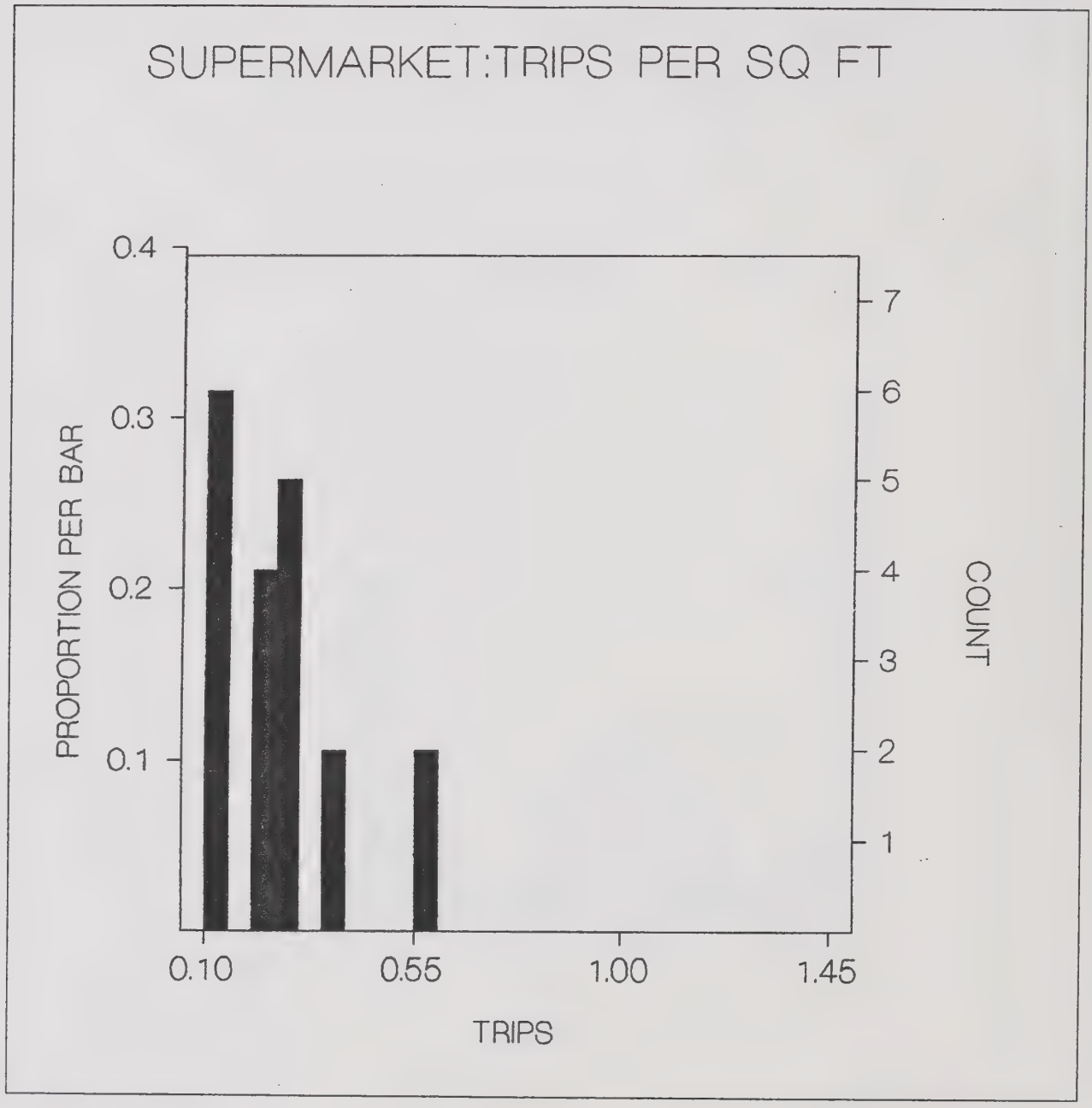
N OF CASES	9
MINIMUM	0.021
MAXIMUM	0.244
RANGE	0.223
MEAN	0.127
VARIANCE	0.004
STANDARD DEV	0.060
STD. ERROR	0.020
C.V.	0.472
MEDIAN	0.135



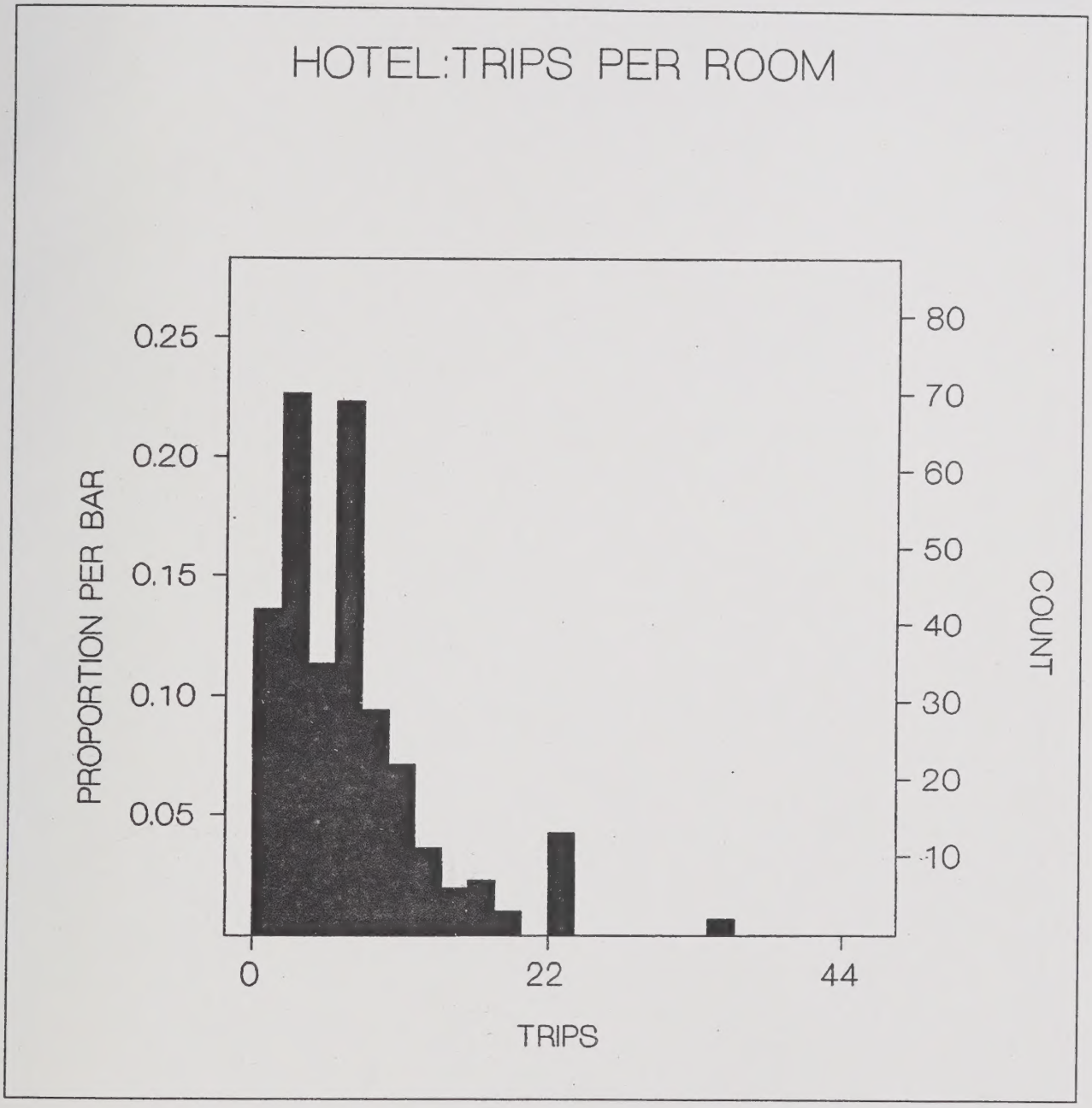
N OF CASES	15
MINIMUM	0.007
MAXIMUM	0.031
RANGE	0.024
MEAN	0.018
VARIANCE	.668841E-04
STANDARD DEV	0.008
STD. ERROR	0.002
C.V.	0.458
MEDIAN	0.017



N OF CASES	1343
MINIMUM	0.000
MAXIMUM	0.880
RANGE	0.880
MEAN	0.098
VARIANCE	0.025
STANDARD DEV	0.157
STD. ERROR	0.004
C.V.	1.598
MEDIAN	0.029



N OF CASES	19
MINIMUM	0.127
MAXIMUM	1.045
RANGE	0.918
MEAN	0.360
VARIANCE	0.060
STANDARD DEV	0.244
STD. ERROR	0.056
C.V.	0.680
MEDIAN	0.279



N OF CASES	**309**
MINIMUM	**0.000**
MAXIMUM	**35.528**
RANGE	**35.528**
MEAN	**7.301**
VARIANCE	**32.517**
STANDARD DEV	**5.702**
STD. ERROR	**0.324**
C.V.	**0.781**
MEDIAN	**6.376**